injury and violence in america

Meeting Challenges, Sharing Solutions

May 9-11, 2005
Denver, Colorado

Abstract Book

DEPARTMENT OF HEALTH & HUMAN SERVICES USA
CDC SAFER · HEALTHIER · PEOPLE™
STIPDA State & Territorial Injury Prevention Directors Association
NAICRC National Association of Injury Control Research Centers

Contents

Agricultural Injury invited session*

Tuesday 10:15 - 11:45 AM

Migrant Farm Worker Injury: Demographic Characteristics, Work-Related Risk Factors, and Future Directions for Research

Stephen A McCurdy, MD, MPH (Pres)

Division of Environmental and Occupational Medicine, Department of Public Health Sciences,University of California, Davis, CA

Background: Injury represents an important health and economic problem in the agricultural industry. Although an important body of research has accumulated for injury among farmers and agricultural workers in other areas of the U.S., few data are available for migrant farm workers. There are approximately 3 million migrant and seasonal farm workers and dependents in the U.S., and estimates of the population in California range from 600,000 to 1.2 million. Farm workers tend to belong to ethnic and linguistic minorities. The predominant ethnic group is Hispanic, and in California this group constitutes approximately 90% of migrant and seasonal farm workers. Farm workers may be at increased risk for injury because they are most immediately involved in production tasks. Hazards include animals, machinery, chemicals, and dangerous environmental conditions. Contributing factors in this population include low educational status, poor English and literacy skills, and inadequate understanding of existing reporting and support structures such as Workers' Compensation.

Childhood Agricultural Injury Prevention: Major Accomplishments, Persistent Problems, and Next Steps

Barbara C Lee, PhD (Pres)

National Children's Center for Rural and Agricultural Health and Safety, Marshfield, WI

Background: In 1996 the U.S. adopted a National Action Plan for Childhood Agricultural Injury Prevention; that was updated during a 2001 Summit. More than $40 million has now been invested for research and interventions.

Major accomplishments include: a) NIOSH has conducted injury surveillance, generating baseline and 3-year follow-up injury data; b) NIOSH has funded 40 extramural studies; c) USDA funded projects to train and certify young tractor operators; d) North American Guidelines for Children's Agricultural Tasks were released in 1999; e) Creating Safe Play Areas on Farms was released in 2003; f) private organizations have sponsored school-based education and safety day camps.

Persistent problems include: a) few regulations affect children's work in agriculture; b) rural areas have limited access to childcare; c) parents allow children into hazardous agricultural settings despite known risks; d) empirical research is needed to establish work exposure limits for youth and identify incentives that motivate employers to protect adolescent farmworkers; e) increasing numbers of immigrant farmworker youth present challenges for occupational safety initiatives.

Future Steps: To make a notable impact, off-site childcare services must be developed; financial incentives for improving safety conditions must be driven by insurers, and policy mandates for removing nonworking youth from worksites and for improving the occupational safety conditions for those youth engaged in farm work should be considered at state and federal levels.

Injuries in the Iowa Certified Safe Farm Study

Risto H Rautiainen, PhD (Pres), JL Lange, PhD, CJ Hodne, PhD, S Schneiders, MS, KJ Donham, DVM

University of Iowa, Iowa City, IA

Background: The aims of this paper were to assess injury characteristics and risk factors in the Iowa Certified Safe Farm (CSF) program and to evaluate the effectiveness of CSF for reducing injuries. This intervention program includes a health screening, on-farm safety review, education, and monetary incentives.

Methods: Cohorts of farmers in an intervention group (n = 152) and control group (n = 164) in Northwestern Iowa were followed for a three-year period. During the follow-up, there were 318 injuries (42/100 person-years), of which 112 (15/100 person-years) required professional medical care.

Results: The monetary cost of injuries was $51,764 ($68 per farm per year). There were no differences in the self-reported injury rates and costs between the intervention and control groups. Raising livestock, poor general health, and exposures to dust and gas, noise, chemicals and pesticides, and lifting were among risk factors for injury. Most injuries

in this study were related to animals, falls from elevation, slips/trips/falls, being struck by or struck against objects, lifting, and overexertion. Machinery was less prominent than generally reported in the literature. Hurry, fatigue, or stress were mentioned as the primary contributing factor in most injuries.

Conclusion: These findings illustrate the need for new interventions to address a multitude of hazards in the farm work environment as well as management and organization of farm work.

Perspectives From a Father, Farmer, and First Responder

Kevin Paap, EMT (Pres)

Paap Farms, Farm Safety 4 Just Kids, Garden City, MN

Background: The perspective of a working farmer with adolescent children living and working on the farm is brought to this panel presentation by Kevin Paap. Kevin and his wife, Julie, operate a fourth-generation family farm where they raise corn, soybeans, and boys. Serving as an emergency medical technician on the volunteer fire department for over 26 years, Kevin has a unique perspective of childhood injuries and is actively involved in safety programs in his area, state, and region. The issues which he and his family view as important and impacting quality of life or affecting decisions made for the farm on a daily basis are addressed. The way of rural life and how it can impact the lifestyle and decisions of farm families is also discussed. Childhood agricultural injury prevention issues and how they are perceived to affect and impact farmers in general and at a personal level are explored. Concrete, real-life examples of prevention activities and suggestions for potential childhood agricultural injury prevention efforts are presented. Based on his experience in working with groups of farmers and teaching health and safety at a community college, he believes farmers learn best from other farmers and that voluntary, incentive-based, locally designed and implemented strategies have been and will continue to be the most effective avenues to having safer farms. Technological advances (such as safety switches and self-unplugging machines) are having an impact on the injury problem by reducing the need to place farmers at risk for being injured.

Sleep Patterns and Injuries Among Adolescents on Farms

Lorann Stallones, PhD, MPH (Pres)

Colorado State University Injury Control Research Center, Denver, CO

Background/Objectives: The purpose of the study is to describe the relationship between sleep patterns and injury occurrence among adolescents aged 13-18 years living on farms in Colorado.

Methods: A cross sectional survey of randomly selected Colorado farm residents aged 13-18 years was conducted between August 2003 and May 2004. A total of 262 youth completed the study. Information was obtained on injuries within the preceding year, sleep patterns, daytime sleepiness, and a number of social and demographic variables. Univariate analyses were done to describe relationships of study variables with injuries. Multivariate modeling was done to assess sleep patterns that were associated with injuries controlling for other variables.

Results: In univariate chi-square analyses, sleep patterns associated with increased risk of injuries ($p<0.05$) were as follows: having overslept and been late for class, falling asleep in afternoon classes, ever being up past 3 AM and total hours of sleep under 9.25 hours. Controlling for age and sex the odds ratios and 95% confidence intervals were as follows: having overslept and been late for class, OR 2.22 (1.22, 4.02); falling asleep in afternoon classes, OR 2.28 (1.02, 5.11); up past 3 AM, OR 2.30 (1.17, 4.52); and sleeping less than 9.25 hours, OR 1.99 (1.17, 3.40). Proportional odds ratios showed increased injury severity with sleep patterns: having overslept and been late for class, OR 2.15 (1.14, 4.40); falling asleep in afternoon classes, OR 1.91 (1.06, 3.42); and up past 3 AM, OR 2.38 (1.39, 4.06).

Conclusions: Sleep patterns were significantly associated with a higher occurrence of injuries and with more severe injuries among farm adolescents. A number of strategies for reducing sleep pattern associated injury risk are being examined.

Learning Objectives:

1. Understand the relationship of sleep patterns and injuries among adolescents living on farms
2. Understand factors associated with disrupted sleep patterns and injuries among adolescents on farms
3. Understand the role of sleep patterns in injury severity among adolescents on farms

Building Infrastructure for Injury and Violence Prevention * *invited session*

Monday 3:00 - 4:30 PM

Core Competencies for Effective Practice in Youth Violence Prevention

Lyndee Knox, PhD

Southern California Developing Center of Academic Excellence on Youth Violence Prevention, UC Riverside and University of Southern California Keck School of Medicine, Los Angeles, CA

Background: The CDC, AMA, AAP, and most major health associations have called for health professionals to become active in efforts to prevent youth violence; however, very few health professionals are prepared to assume these roles.

Methods: In 2000, 10 CDC youth violence prevention centers were established across the U.S. One of their mandates is to provide training for health professionals in youth violence and its prevention. In 2001, 8 of the 10 centers and a range of outside experts came together to identify the core competencies required for effective practice in youth violence prevention for medicine, nursing, allied health, and public health professionals. A 2-day meeting of ACE faculty and outside experts was held in Los Angeles followed by consensus building and iterative review of the proceedings and ensuing recommendations to produce a cross-center report identifying "core competencies" for the health professions.

Results: Three levels of competencies (generalist, specialist, scholar) were identified across 7 ecological domains (knowledge, attitude, communication, clinical interventions, practice management, working with communities, political/social advocacy and change).

Conclusions: Health professionals can make significant contributions to youth violence prevention but must be properly trained to do so. The ACEs in Youth Violence Prevention have been an important resource for catalyzing work in the area and identifying core competencies that can guide future curriculum development. Findings have been disseminated through 3 academic articles, a monograph, and development of the AMA's *Connecting the Dots: Training and Outreach Guide for Health Professionals in Youth Violence Prevention*. More work is needed, particularly in identifying optimal roles for health professionals and best practices intersecting the health and youth violence prevention sectors to further inform the core competencies.

Learning Objectives: Participants will be able to do the following:

1. Be able to identify the ACE Core Competency document and provide an overview of its contents
2. Discuss 3 applications of the ACE report and other similar ones to health professional training in their discipline/profession/line of work
3. Name three curricular resources for preparing health professionals in youth violence prevention and 3 strategies for incorporating the training in health professional settings

Core Competencies for Injury and Violence Prevention in Public Health Practice

Thomas Songer, PhD (Pres), S Stephens-Stidham, C Peek-Asa, PhD, E Johnson, and the National Training Initiative Group

Center for Injury Research and Control, Pittsburgh, PA

Efforts to reduce the burden of injury and violence require a workforce that is knowledgeable and skilled in practices to reduce them. Currently, there is no systematic process to ensure that professionals who work in injury and violence prevention possess the competencies necessary to be effective.

The National Training Initiative for Injury and Violence Prevention has developed core competencies and learning objectives that define a knowledge and skills set necessary for public health practice in injury and violence prevention. The competencies and objectives were developed by reviewing competency sets in other disciplines, injury prevention curriculum, and needs assessments of practicing professionals. A draft of the competencies was distributed to a panel of 52 experts in injury and violence prevention. Based upon their comment, the competencies were revised, and public comment was obtained.

The following core competencies were identified. Specific learning objectives for each competency can be viewed at www.injuryed.org.

1. Ability to describe and explain injury and/or violence as a major social and health problem
2. Ability to access, interpret, use, and present injury and/or violence data
3. Ability to design and implement injury and/or violence prevention activities

4. Ability to evaluate injury and/or violence prevention activities
5. Ability to build and manage an injury and/or violence prevention program
6. Ability to disseminate information related to injury and/or violence prevention to the community, other professionals, key policy makers, and leaders through diverse communication networks
7. Ability to stimulate change related to injury and/or violence prevention through policy, enforcement, advocacy, and education
8. Ability to maintain and further develop competency as an injury and/or violence prevention professional
9. Demonstrate the knowledge, skills, and best practices necessary to address at least one specific injury and/or violence topic and be able to serve as a resource in that area

These competencies were developed towards the goal of increasing capacity in public health practice for injury and violence prevention. They can be used to guide curriculum for training programs and other workforce development efforts.

Learning Objectives: Participants will be able to:
1. Identify the core principles that public health practitioners should be knowledgeable in to undertake injury and violence prevention activities
2. Identify where to obtain more information on the core competencies
3. Understand how the core competencies were developed

PREVENT: Preventing Violence Through Education, Networking, and Technical Assistance

Corinne Peek-Asa, PhD[1] (Pres), D Ruggles[2], C Runyan[3], T Coyne-Beasley, SL Martin[3]

[1]University of Iowa, Iowa City, IA
[2]Washington State Department of Health, Olympia, WA
[3]University of North Carolina PREVENT project, Chapel Hill, NC

Background/Objectives: The burden of violence on individuals and society has established violence as a high priority public health concern. Violence in its various forms is increasingly recognized as requiring urgent, vigorous, and sustained prevention efforts. PREVENT is a nationwide training program that supports sustainable efforts in the primary prevention of violence.

Methods: PREVENT has been developed based on ongoing efforts of CDC/NCIPC, STIPDA, NAICRC, and the STIPDA/NAICRC National Training Initiative (NTI). PREVENT builds sustainable violence prevention programs by building capacity in five areas: identifying community needs and assets; creating and mobilizing partnerships; developing effective prevention programs; measuring success; and sustaining programs.

Results: PREVENT is designed to facilitate individual learning and organizational effectiveness by providing education, networking and technical assistance. PREVENT has several training approaches. Regional Workshops introduce primary prevention and strategic program planning processes. A Leadership Institute, designed for multi-organizational teams, supports development of leadership skills, creation of strategic partnerships, and planning of successful prevention programs. Distance learning modules provide information to a wider population, and also reinforce lessons learned in the workshops and the Institute. PREVENT fosters networking through multiple forums that help violence prevention organizations find common ground, learn from each other, and link experienced violence prevention professionals with teams just beginning primary prevention efforts. PREVENT builds and supports skills among practitioners through short-term and ongoing technical assistance from experienced advisors using a variety of formats.

PREVENT has conducted three Workshops and one Leadership Institute, and is currently developing distance learning materials. Future workshops and Institutes are being planned through the next several years to enable participation across all regions of the U.S.

Conclusions: By targeting change in both individuals and organizations, PREVENT aims to stimulate more effective and broad-based approaches to preventing violence.

Learning Objectives: Participants will be able to:
1. Understand the need for increased sustainability of primary prevention in the field of violence prevention
2. Identify three strategies of building sustainable and effective programs
3. Describe PREVENT approaches to building capacity in violence prevention and how seminar participants can become involved

Using Evidence-Based Planning, Theory, and Evaluation in the Prevention of Domestic Violence: Providing Training and Technical Assistance to the DELTA Program

Reshma R Mahendra, MPH (Pres), PJ Cox

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: The Domestic Violence Prevention Enhancements and Leadership Through Alliances (DELTA) Program is a program funded by the CDC to implement primary prevention of intimate partner domestic violence (IPDV) through the local coordinated community response model. Coordinated community responses (CCRs) were initially organized to coordinate local community IPDV intervention services. Since most CCRs focus on responding to IPDV after it occurs, the DELTA Program seeks to integrate primary prevention principles, concepts, and practices into local CCRs to reduce the incidence of IPDV. These primary prevention principles, concepts, and practices include the following:

1. Preventing first-time perpetration and first-time victimization
2. Reducing risk-factors associated with IPDV perpetration or victimization
3. Promoting protective factors that reduce the likelihood of IPDV perpetration or victimization
4. Evidence-based prevention program planning
5. Use of behavior and social change theories inprevention planning
6. Addressing all levels of the social ecology in prevention planning and evaluation
7. Evaluating prevention programs and activities and using results to inform future prevention work

Methods: In 2005, the CDC sponsored a national training for state and local participants of the DELTA project. The purpose of the DELTA National Training was (1) to provide participants with the knowledge and skills necessary to strengthen their use of primary prevention principles, concepts, and practices and (2) to enhance partnerships between state and local practitioners in IPDV prevention.

Results/Conclusions: This presentation will provide an overview of the training and technical assistance provided as part of the DELTA project, particularly focusing on the public health, prevention, and CDC principles utilized in the implementation of this project.

Learning Objectives:

1. Describe a program that addresses primary prevention of Intimate Partner Domestic Violence
2. Define primary prevention principles, concepts, and practices as it relates to the DELTA project
3. Describe the use of training and technical assistance in the planning and implementation of domestic violence prevention programming

What Is Injury and Violence Prevention Infrastructure?

Barak Wolff, MPH

New Mexico Department of Public Health, Santa Fe, NM

Background/Objectives: The Advisory Committee for the Injury Prevention and Control (ACIPC) provides ongoing advice and direction to the National Center for Injury Prevention and Control (NCIPC) at CDC. A work group of the ACIPC was convened over the last two years to help define Injury and Violence Prevention Infrastructure so that it can be better assessed and strategies for improvement can be formulated.

Methods: Since spring of 2003, the ACIPC Infrastructure Working Group, comprised of representatives from several national injury organizations, has been discussing, researching, conceptualizing, and drafting a definition for injury and violence prevention infrastructure in several domains—national, state, local, tribal, and university/research centers. Numerous drafts were reviewed and improved in consultation with the ACIPC.

Results: In fall of 2004, the ACIPC endorsed a definition of Injury and Violence Prevention Infrastructure and recommended that the NCIPC support an effort to utilize the definition as a basis for assessing the current status, gaps, requirements, and priorities to improve this infrastructure at the various levels.

Conclusions: As is often the case, the hard work has just begun. It is hoped that this shared definition of Injury and Violence Prevention Infrastructure will lead to improvements and further the cause of a healthier and safer nation.

Child Maltreatment

Tuesday 8:30 - 10:00 AM

Preventing Child Sexual Abuse Within Youth-Serving Organizations: What the Experts Say

Janet Saul, PhD (Pres), N Audage, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: Organizations that serve children and youth are focused on cultivating the health and happiness of young persons with the hope of assisting their development into responsible, mature, happy adults. Positive interactions among staff, volunteers, and the youth engaged in these programs are an essential element of the mission of these organizations. However, close relationships between adults and children can also involve negative interactions such as child sexual abuse (CSA). Thus, youth-serving organizations have the difficult responsibility of encouraging close, positive interactions within their organizations while at the same time protecting the children they serve from abuse. Many organizations have adopted policies and procedures to prevent CSA from occurring within the confines of their organizations.

Methods: In August of 2004, CDC convened a 17-member expert panel to address the issue of CSA prevention within organizations. Included on the panel were representatives from faith-based, sports and recreation, camping, education, and after-school organizations as well as researchers and resource providers.

Results/Conclusions: This presentation will include the following: an overview of strategies suggested by the expert panel for organizations that wish to create their own CSA prevention policies and procedures, a summary of barriers that the experts faced in their own organizations, and a review of potential mechanisms for overcoming these barriers.

Learning Objectives: List four policies that some organizations use in child sexual abuse prevention efforts; Identify where to get information on how to create child sexual abuse prevention policies within their organizations; Develop and track a plan for creating child sexual abuse prevention policies.

The Association Between Presence of Children in the Home and Firearm Ownership and Storage Practices

Susan M Connor, PhD (Pres)

Case Western Reserve University, Cleveland, Ohio, and Rainbow Babies and Children's Hospital, Cleveland, OH

Background: American children's ready access to firearms contributes to high rates of firearm-related injuries. Understanding the factors that influence storage decisions is critical for prevention.

Objective: To examine the influence of geography and presence of children <16 years old in the home on firearm-ownership and storage decisions of northeast Ohio residents.

Methods: Based on 522 responses to randomized telephone surveys of urban and rural households in northeast Ohio, relationships between four dependent variables related to firearm ownership and storage and two independent variables (geography and presence of children in the home) were evaluated using odds ratios and multinomial logistic regression.

Results: Firearms were significantly more common in rural (31%) than in urban (13%) households. Only 22% of gun owners reported securing all firearms with trigger locks or storing them in locked safes or drawers; 12% reported storing guns unlocked and either loaded or together with ammunition. Most gun owners (66%) reported storing all firearms unlocked, unloaded, and separate from ammunition. Rural respondents without children were twice as likely as those with children to have handguns, but children did not influence long gun ownership. In the urban group, the presence of children was not related to likelihood of firearm ownership. Having children in the home was not significantly associated with higher rates of safe storage for either group.

Conclusions: These results highlight the need to better understand gun owners' reasoning about children and guns to design and implement successful interventions. Physicians and others interested in reducing pediatric exposure to firearms cannot be credible messengers on gun-safety topics if they cannot demonstrate an understanding of the issues from the perspective of patients and their families.

Learning Objectives: After this session participants should be able to: Identify differences in urban and rural patterns of firearm ownership and urban/rural differences in reported reasons for owning guns; Describe some possible reasons

why having children in the home does not appear to influence firearm storage decisions and define the limitations of one-size-fits-all firearm safety interventions; Discuss the benefits of using ethnographic methods to get beyond statistics and identify factors that put children at risk.

The Wide-Ranging Health Outcomes of Adverse Childhood Experiences

Valerie J Edwards, PhD[1] (Pres), RF Anda, MD, MS[1], SR Dube, MS[1], M Dong, MD, PhD[1], DP Chapman, PhD[1], VJ Felitti, MD[2]

[1]Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Atlanta, GA
[2]Southern California Permanente Medical Group, San Diego, CA

Background: Most previous studies in the area of childhood maltreatment were based on small clinical samples and included a single maltreatment type. The Adverse Childhood Experiences (ACE) Study was expanded maltreatment research to include multiple abuse types as well as family dysfunction, utilizing a sample of healthy adults who were not seeking assistance for abuse-related difficulties. In addition, we sought to measure the cumulative impact of ACEs on a broad range of health outcomes. To date, it is one of the largest epidemiological studies ever performed in this field.

Methods: Adult HMO members in a large metropolitan area undergoing a standardized physical examination provided retrospective reports of all forms of childhood abuse and various types of family dysfunction. Current health status and disease conditions were extracted from their physical exam. Over 17,000 adults participated in the study.

Results: ACEs are widespread, co-occurring, and interrelated. Over two-thirds of the participants reported at least one ACE, and more than 20% reported 3 or more ACEs. An overview of findings from over 30 published studies linking ACEs to poor health outcomes will be presented, in areas including chronic diseases, reproductive health, and mental health.

Conclusions: A history of abuse is critically related to health later in life. Practitioners should be aware of the maltreatment history of their patients, as it is may impact adherence to treatment and health behaviors. The ACE Study is continuing to study the healthcare utilization patterns of its participants, as well as costs associated with child maltreatment. Additional studies documenting the development of disease conditions and mortality are planned.

Learning Objectives: Describe the prevalence, co-occurrence, and interrelatedness of adverse childhood experiences; Understand the association between ACEs and a wide variety of physical health problems later in life; List potential mechanisms that may explain the associations between ACEs and later-life physical health problems.

ICD Codes Suggestive of Child Maltreatment: Identification and Assessment of Validity

Patricia G Schnitzer, PhD[1] (Pres), P Slusher, MSN[2], MM Tarleton, BSN[1], M Van Tuinen, PhD[3]

[1]University of Missouri – Columbia, Department of Family and Community Medicine, Columbia, MO; [2]Boone Hospital Center, Columbia, MO; [3]Missouri Department of Health and Social Services, Jefferson City, MO

Background/Objectives: Healthcare providers often fail to identify child maltreatment or specify maltreatment as a diagnosis when it is suspected. In an effort to increase the usefulness of administrative data for public health surveillance, we sought to identify ICD-9-CM (ICD) codes suggestive of child maltreatment.

Methods: After review of the literature and discussions with experts, we identified injuries and conditions that should raise suspicion by medical providers of maltreatment and compiled a list of corresponding ICD codes "suggestive" of child maltreatment. Using a statewide electronic database of hospital and ED discharges, we identified visits by children assigned these potentially suggestive codes. We then reviewed the medical record to assess the circumstances of the injury or illness that led to the visit, and classified the information into three maltreatment categories: probable, possible, unlikely.

Results/Conclusion: There were 3,684 visits selected for review. Of the 2,826 records reviewed, 402 (14%) met the predetermined criteria for probable maltreatment, 798 (28%) met the criteria for possible maltreatment, 1,419 (50%) contained adequate information indicating the injury/condition was not likely maltreatment-related, and 207 (7%) records did not contain enough information to classify. 858 records were either unavailable for review (245/29%) or met exclusion criteria. Approximately 45 three-digit ICD codes had > 66% of visits classified as probable or possible maltreatment, our a priori criteria for a code to be considered suggestive of maltreatment. These codes include specific fractures, burns, and injuries of undetermined intent, among others. In conclusion, we identified ICD codes that, when used with age restrictions and other specific exclusion criteria, are suggestive of maltreatment. This information may increase the usefulness of hospital discharge data for public health surveillance of child maltreatment.

Learning Objectives: Describe 2 reasons child maltreatment might not be coded in the medical record; Identify 3 ICD codes suggestive of child maltreatment; List 2 limitations of using ICD codes for surveillance of child maltreatment.

Costs of Injury

Monday 3:00 - 4:30 PM

A Cost Analysis of the Smoke Alarm Installation and Fire Safety Education Program

John Parmer, MS (Pres), PS Corso, PhD, MF Ballesteros, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: Functioning smoke alarms are an effective and inexpensive means of protecting homes, yet many households such as those in rural areas and below the poverty level are without smoke alarm protection. The authors examined the cost of providing smoke alarms to these high-risk communities through the Smoke Alarm Installation and Fire Education (SAIFE) program funded by the CDC's Injury Center. Program activities include staff visiting homes, installing alarms, and educating participants.

Methods: A retrospective cost analysis was conducted in four states, with 12 communities funded for smoke alarm installation and fire safety education. These costs included direct financial expenditures and donated resources required to implement four program activities: training, canvassing, installation, and follow-up visits. Costs were categorized by personnel, transportation, facility, and supplies. Cost per visit and cost per alarm installed were calculated for each of the four states and 12 sites.

Results: Personnel represented the largest cost category for all 12 sites, with installation activities requiring the largest percentage of personnel resources. The average local cost per completed visit across all 12 sites was $144.48, with an average local cost per alarm installed of $76.95. The average combined state and local cost per alarm installed across all four states was $99.87. Regression analysis shows that for every one percent increase in alarm installation, costs per alarm decrease by $1.36.

Conclusions: A comparison of average local cost per alarm installed shows that as more smoke alarms are installed, average cost of installing each alarm decreases, demonstrating the important effects of economies of scale. This suggests that CDC's program offers public health improvements with the potential for positive economic returns on investment.

Learning Objectives: Describe the activities of CDC's program and the resources required to achieve the program's goals; Identify the average costs per visit and average cost per alarm installed at the state and local level; Describe the efficiency in which CDC's program is being implemented in the larger context of resource allocation decisions in public health.

Alaska Seat Belt Cost Analysis

Ron Perkins, MPH

Alaska Injury Prevention Center, Anchorage, AK

Background/Objectives: More than 39,000 Alaskans are involved in motor vehicle crashes every year. The medical costs alone are estimated to be over $14.5 million per year, while property damage and long-term disabilities add millions more to this figure. This study quantified the direct costs associated with restrained and unrestrained occupants involved in motor vehicle crashesand the sources of payment for these hospitalizations.

Methods: Data supplied by the Alaska Department of Transportation and Public Facilities and the Alaska Trauma Registry (ATR), were analyzed to document the hospitalization costs to treat restrained and unrestrained motor vehicle occupants from 1996 through 1999.

Results: The study revealed that the decision not to wear a seat belt has economic consequences for everyone: Medical costs for those not wearing a seat belt totaled $13 million. Of this amount, 50% was paid with public funds. Crash victims averaged 2,672 days in the hospital each year. Fifty-eight percent were unrestrained at the time of the crash. Medicaid costs to treat 83 crash victims under the age of 20 totaled $1.6 million. Nineteen survivors were placed in "skilled nursing facilities" at a cost of $1 million, of which 77% was paid by public sources. More than $2.6 million in public funds is spent each year to care for unbuckled crash victims, which doesn't include deaths and long-term disabilities.

Conclusions: This analysis makes a compelling economic case for the use of seat belts. Introduction and implementation of programs and public policies to encourage seat belt use will result in fewer injuries and deaths, ultimately reducing the financial burden on the taxpayers.

Costs of Nonfatal Fall Injuries Among Older Adults in the United States, 2000

Phaedra S Corso, PhD[1] (Pres), JA Stevens, PhD[1], EA Finkelstein, PhD[2], TR Miller, PhD[3]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]RTI International, Research Triangle Park, NC; [3]Pacific Institute for Research and Evaluation, Calverton, MD

Background: Falls among older adults are a major public health concern because of their frequency, premature mortality, morbidity, and associated healthcare costs. The objectives of this study were to quantify the incidence and medical costs for nonfatal fall injuries in 2000 among adults aged 65 years or older in the United States.

Methods: Incidence estimates for nonfatal injuries were obtained from a variety of national public use files for three mutually exclusive categories reflecting injury severity: injuries requiring hospitalization, treatment in an emergency department (ED), or treatment in an outpatient/medical setting. Medical costs were obtained from the Medicare fee-for-service 5% Standard Analytical Files. A case-crossover design was used to compare monthly costs of fallers pre- and post-fall over a 24-month period. A generalized linear regression model was used to estimate costs. Incidence and costs were further stratified by injury severity, by age, and by sex.

Results: In 2000, nearly 2.6 million nonfatal falls occurred among persons aged 65 years or older, resulting in medical care costs totaling $19.3 billion dollars. Of total costs, 63% ($12.1 billion) were for injuries that required hospitalization, 21% ($4.1 billion) were for ED-treated injuries, and 16% ($3.1 billion) were for injuries treated in outpatient settings. Females sustained 69% of all fall-related injuries and incurred 73% of total costs. For all age categories, females experienced greater numbers of injuries and higher costs compared to males.

Conclusions: Falls among older adults, especially among older women, are an important public health problem and incur substantial healthcare costs. The magnitude of this economic burden underscores the need for active research into effective and cost-effective prevention interventions.

Societal Willingness to Pay to Reduce the Risk of Traumatic Brain Injury

Paulo D Guimaraes, PhD[1] (Pres), AW Selassie, DrPH[1], JR Woods, PhD[2]

[1]Medical University of South Carolina, Charleston, SC
[2]University of South Carolina, Columbia, SC

Background: Despite the fact that traumatic brain injury (TBI) is a major cause of death and disability, little is known about the economic benefits of programs designed to reduce its occurrence.

Methods: Willingness to pay (WTP) estimates derived from a meta-analysis of 29 previous studies were updated for inflation and discounted at 5% to account for the present value of averting future TBIs. Adjusted values were then applied to population-based data to develop WTP estimate to prevent TBI.

Results: Aggregate WTP ranged from $35.7 million, to prevent 5,774 mild TBIs, to $2.2 billion, to prevent 768 fatal TBIs. Age-stratified WTP estimates varied from $36.2 million, to prevent 166 TBIs in infants (<1 year old) with a life expectancy of 73.5 years, to $38.6 million, to prevent 361 TBIs in elderly people (85 and older) with a life expectancy of 6.2 years. Total willingness to pay applied to the statewide population with 65,823 incident cases occurring over 5 years was $3.6 billion per annum.

Conclusions: Decision-makers need to know the value people place on health to rationally allocate scarce resources among competing priorities. WTP estimates reported here present whether net benefits of specific TBI prevention programs exceed net program costs.

Learning Objectives: Provide an overview of the societal willingness-to-pay to avert TBIs applied to the state of South Carolina; Present a simple method that can be used generally in cost-benefit analyses by others to determine whether specific TBI prevention programs would likely offer a net gain to society; Understand the merits and limitations of WTP- based approaches.

Utilization and Costs of Healthcare Resources Associated With Suicidal Acts: Can Medical Claims Data Be Used as a Monitoring Tool?

Phaedra S Corso, PhD (Pres), T Haileyesus, MS

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: Longitudinal, medical claims data can provide a wealth of information on the marginal utilization and cost of healthcare resources consumed by persons who commit suicidal acts. The objectives of this study are to assess the costs associated with suicidal acts requiring hospitalization, and to assess the distribution of outpatient claims and costs surrounding the suicidal acts, and additionally for those outpatient claims that are mental-health related.

Methods: Claims data were used to identify persons hospitalized between 1998 and 2001 with a suicide diagnosis (ICD-9-CM E950-959) and to assess their utilization/costs of inpatient services. For each person, we then linked to a complementary outpatient claims database to assess average utilization/costs of outpatient services for each of the 12 months preceding and following the inpatient admission date for all outpatient claims and then specifically for mental-health (MH) related diagnoses (ICD-9-CM codes 290-319).

Results: For n=404 suicide attempters for which a hospitalization was required, average costs were $7,223 (in 2002 US$). The utilization/costs of outpatient services significantly increased 7 months preceding the suicidal act and remained significant for 7 months following the act, totaling ~$3,000 in excess outpatient costs over the 2-year period. MH-related utilization/costs of outpatient services significantly increased 5 months preceding the act and remained significant for 6 months following the act, accounting for ~60% (or $1,700) of the excess outpatient claims.

Conclusions: Our results suggest that significant increases in outpatient claims for persons at risk of suicidal acts could serve as a marker for predicting future hospitalizations for suicide attempts. Increases in MH-related claims could provide a similar marker, although the predictive time is shorter and perhaps could be strengthened if monitored in conjunction with all outpatient claims.

E-Code Projects invited session*

Tuesday 1:45 - 3:15 PM

External-Cause-of-Injury Coding in Statewide Morbidity Data Systems: Status, Uses, and Challenges

J Lee Annest, PhD (Pres)

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: This session will summarize the status of external-cause-of-injury coding (E-coding) in statewide hospital discharge data systems (HDDS) and hospital emergency department data systems (HEDDS) in the United States. Examples will be given on state-specific uses of E-coded HDDS and HEDDS data in developing injury prevention programs, assessing unintentional and violence-related injuries in communities, and setting public health policy. Discussion will focus on challenges/recommendations aimed at improving E codes.

Methods: Two independent surveys were conducted on the collection and use of E-codes in statewide morbidity data systems: (1) survey by the Agency for Healthcare Research and Quality regarding policies/procedures and associated E-coding by states that contribute to the Healthcare Cost and Utilization Project and (2) survey by the Council of State and Territorial Epidemiologists (CSTE)/APHA Injury Control and Emergency Health Services Section (ICEHS)/State and Territorial Injury Prevention Directors Association (STIPDA) to update data on how states are collecting and using E-codes. In addition, uses of E-codes in selected states were documented in a report prepared by a Committee of the Public Health Data Standards Consortium.

Results: Some progress is being made to improve E-coding in statewide HDDS and HEDDS, but substantial variation remains in the quality and completeness of E- coding among states. States with mandates that require E-coding have a higher percentage of completeness of injury-related data. States with nearly complete E-coding are using these data in characterizing injuries by cause and intent, determining intervention strategies, and evaluating injury prevention programs.

Conclusions: The usefulness of E-codes in statewide morbidity state systems is evident, but challenges remain to attain high quality and complete E-coded nonfatal injury data in every state.

Learning Objectives:
1. Understand the current status of E-coding in statewide morbidity data systems
2. Describe uses of E-codes in prevention program planning and evaluation
3. Outline the challenges and recommendations for improving E-coded nonfatal injury data in state-based morbidity data systems

How States Are Collecting and Using External-Cause-of-Injury Data (E-codes): 2004 Update to the 1997 Report

Joseph Abellera, MPH[1], Melvin Kohn, MD, MPH[3] (Pres), JL Annest, PHD[2], JM Conn, MS, EMBA[2]

[1]Council of State and Territorial Epidemiologists, Atlanta, GA
[2]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [3]Oregon Department of Human Services, Portland, OR

Background/Objectives: E-coded statewide Hospital Discharge Data Systems (HDDS) and Hospital Emergency Department Data Systems (HEDDS) are important sources of injury surveillance data. We repeated a survey done by the American Public Health Association in 1997 in order to evaluate progress toward the collection and use of E-codes in statewide morbidity data systems.

Methods: Using the 1997 E-code survey questions, information was collected from 49 state and territorial injury prevention directors via a web-based survey provided by the Council of State and Territorial Epidemiologists.

Results: Compared to 1997, 3 more states have acquired HDDS, but 5 states are still without one. Half of states still do not have an HEDDS. Of states that have evaluated their systems, only 14 (44%) HDDS and 6 (55%) HEDDS have more than 90% of their injury records E-coded. Overall in 2004, systems with mandated E-coding (26 states for HDDS and 15 states for HEDDS) have a higher percentage of injury records E-coded. There continues to be great heterogeneity across states in the number and type of fields available for E-codes in these data systems and the agency in which these data systems are housed. The number of publications using E-coded data has increased since 1997.

Conclusion: Overall, there has been only modest improvement in the availability and quality of E-coded hospitalization and emergency department data from 1997 to 2004. Further improvement will require a focused, coordinated effort by federal and state public health partners. Based on the survey findings additional specific recommendations for improving E-coding of HDDS and HEDDS will be presented.

Learning Objectives:
1. Describe the availability of statewide data on injury-related hospital discharges and hospital emergency department visits
2. Evaluate the progress toward the collection and use of E codes in statewide morbidity data systems from 1997 to 2004
3. Educate others about steps that can be taken to improve E-coding in statewide morbidity data systems

The Healthcare Cost and Utilization Project E-Codes Evaluation

Jeffrey H Coben, MD[1,2] (Pres), CA Steiner, MD, MPH[1], M Barrett, MS[3]

[1]Agency for Healthcare Research and Quality, Rockville, MD
[2]West Virginia Injury Control Research Center, Morgantown, WV
[3]ML Barrett, Inc, Santa Barbara, CA

Background/Objectives: The Healthcare Cost and Utilization Project (HCUP) is a family of databases derived from discharge data. In 2001, HCUP included the universe of hospital discharge data submitted by 33 participating states, capturing approximately 85% of all hospital discharges in the United States. Eighteen states also provided ambulatory surgery data, and nine provided statewide emergency department data. The objectives of this study were to determine the completeness of coding external causes of injury (E-codes) within the HCUP databases and to examine state policies and procedures on E-codes reporting.

Methods: Injury diagnoses were identified in four different HCUP databases: the Nationwide Inpatient Sample (NIS), the State Inpatient Databases (SID), the State Emergency Department Databases (SEDD), and the State Ambulatory Surgery Databases (SASD). E-coding completeness was determined using criteria previously recommended by STIPDA. Structured telephone interviews were conducted with state Data Organizations to gather policies on E-code reporting.

Results: Within the NIS, E-codes were present on 85.7% of cases with an injury principal diagnosis. Across the 33 SIDs, E-codes were present on 52.6% to 99.4% (mean = 87.2%) of cases. Nineteen of 33 SIDs reported E-codes on at least 90% of injury discharges. Across the 9 SEDDs, E codes were present on 71.9% to 99.4% (mean = 92.5%) of cases. Across the 18 SASDs, E-codes were present on 8.2% to 99.5% (mean = 80.1%) of cases. Telephone interviews revealed substantial variation in state policies and states with reporting mandates had more complete E-coding.

Conclusions: E-coding completeness within HCUP compares favorably to other existing national and state databases. Implications for injury research and state policies will be discussed.

Using External Cause of Injury Codes: States' Compelling Stories

Robert Davis, MS (Pres)

Public Health Data Standards Consortium, Hyattsville, MD

Background/Objectives: This segment of the panel presentation will describe how external-cause-of-injury coding (E-coding) has been utilized in five states to enhance public health injury prevention programs. A white paper was prepared by the Public Health Data Standards Consortium (PHDSC) for posting on its Web-based Resource Center (http://phdatastandards.info/) to share insights from states currently using E-codes and to stimulate interest in the importance of reporting and using this information in the field of public health.

Methods: Information was obtained from several states through a survey and interview process conducted by the External Cause of Injury Codes Ad Hoc Committee of the PHDSC with contractual support from the National Center for Health Statistics. Five states participated in the process.

Results: South Carolina used E-coded data to assist in the identification of high-risk residential locations for implementation of smoke detector programs, and to assist local communities in assessing injury patterns in order to develop specific intervention strategies. Utah used E-codes to help hospitals improve detection, reporting, and prevention of adverse events (medical errors and injuries due to medical care). In California, E-codes have been used in many policy debates resulting in legislation to reduce injuries, such as the California Swimming Pool Safety Act and the Firearm Safety Act. Nebraska and Missouri used E-codes to better describe the burden of injury on society and the economy.

Conclusion: Improved data collection, evaluation research, and reporting of E-codes in state-based morbidity data systems can increase awareness about the important role of E-codes in injury education and prevention programs and in compelling policy makers to provide necessary resources in this area of public health.

Falls Among Older Adults

Monday 3:00 - 4:30 PM

A Hospital-Based Geriatric Fall Prevention Clinic: An Interdisciplinary Effort to Change a Hospital System

Anne Esdale, MPH[1] (Pres), L Scarpetta, MPH[1], C Barrett, PhD[2], D Bauer, MD, FACEP[3], L Thrasher, RN, BSN, MI[3], H Lookabaugh-Deur, PT, GCS, MHS[4], Gary Schmekel, BSHSA, MSA

[1]MI Department of Community Health, Lansing, MI; [2]So What? Evaluation Resources, Okemos, MI; [3]Crittenton Hospital Medical Center, Rochester, MI; [4]Generation Care, Muskegon, MI; [5]Genesys Regional Medical Center, Grand Blanc, MI

Background: The Michigan Department of Community Health's Injury and Violence Prevention Section collaborated with two hospitals from 2002 - 05 to plan, implement, and evaluate geriatric fall prevention clinics for patients 65 and older who presented to the Emergency Department with a fall.

Objective: Reduce by 20% the number of falls in the intervention group.

Methods: Eligible patients who presented to the ED received a fall risk assessment and were randomly assigned to an intervention or control group. The intervention group received evidence-based interventions that included comprehensive rehabilitation for intrinsic and extrinsic risk factors; review of medications; and home hazard assessment. The control group received an assessment and standard of care treatment. Patients maintained fall calendars and were contacted monthly to identify falls. Focus groups and qualitative interviews were conducted to identify patient, staff, and system barriers and assets.

Results: One year post-treatment, the intervention group had 33% less falls. Qualitative research findings include: 1) Older adults who present to the ED are elderly and frail which affects recruitment and retention. 2) ED staff are often too busy to do consents and fall risk assessments. 3) Effective educational approaches utilize the Health Belief Model.

Conclusions: A hospital-based geriatric fall clinic with evidence-based interventions is effective in reducing falls among older adults. ED recruitment has challenges in that patients are older and frail and staff may not perceive that fall prevention is a priority. Training of interdisciplinary staff and resolution of system barriers are necessary before establishment of a hospital fall clinic. Effective patient educational approaches utilize the Health Belief Model.

Learning Objectives: After the session, the participant should be able to: Identify best practices of hospital fall clinics; List the components of the multi-factorial fall clinic intervention; Describe at least four hospital system barriers and their resolution.

Emergency Medical Services (EMS) Initiated Fall Risk Identification for Community-Dwelling Older Adults

Kari Dunning, PhD[1] (Pres), L Collett[2], W Jetter, PhD[3], R Hornung, PhD[4], A Modawal, MD[5], C Yund, PhD[6]

[1,4,5]University of Cincinnati, Cincinnati, OH; [2]City of Reading Fire Department, Reading, OH; [3]Sycamore Township Fire Department and Emergency Medical Services, Sycamore, Township, OH; [6]Hamilton County General Health District, Cincinnati, OH

Background/Objectives: Falls are the leading cause of injuries (fatal and nonfatal) among persons aged 65 and older in the United States. The Hamilton County Injury Surveillance System (Ohio) indicates the community fall related death rate to be three times that of the United States. To understand the role EMS can play in preventing falls, the objective of this study is to identify elderly at risk for falls through EMS runs and assess reliability of EMS data.

Methods: Two EMS units located within 15 miles of Cincinnati will complete a fall risk screen (environmental hazards, medications, history of falls, and other known risk factors) for community dwelling persons aged 65 years or older during nonurgent runs. Participants are then visited by a nurse for an extensive fall risk evaluation. Nonparticipation bias will be assessed including age (t test), history of falls, and taking more than three medications (chi square). Reliability of EMS data compared with nursing evaluation data will be reported using kappa and percent agreement.

Results: Of the 301 EMS visits conducted during the first month of the study, 146 (48.5%) were for older adults. Of the 28 persons who underwent EMS screening, 17 (60.7%) reported a history of falls and 22 (78.6%) expressed interest in participating in the randomized control trial. Methodological challenges have included EMS data linkage, informed consent, and participant recruitment. Data collection and analysis is on-going with an anticipated 110 persons interested in participating by April 2005.

Conclusions: EMS visits suggest promise for identifying community dwelling older adults at risk for falls for intervention and research purposes.

Learning Objectives: At the end of the presentation, participants will be able to: Describe characteristics of persons willing to participate in an EMS initiated fall prevention randomized control trial and potential nonparticipation bias; Identify challenges of recruiting research subjects aged 65 years and older for fall prevention programs through the EMS and possible methods to overcome these challenges; Describe reliability of fall risk factor screen data collected by EMS. This study is a randomized control trial; however, due to timing of the conference, the randomized control results will not be reported. This presentation will focus on methodology strategies of conducting a fall prevention randomized control trial through EMS and investigate the EMS role and ability to identify fall risk in community dwelling elderly.

Fall Prevention for Seniors Can Begin at Home

Allison P Hawkes, MD, MS[1] (Pres), V Cassabaum, RN[1], L Tan, RN, FNP[1], J Barnes[1], R Wang, RN[2]

[1]St. Anthony Central Hospital, Denver, CO
[2]Volunteers of America, Colorado Branch, Denver, CO

Background/Objectives: In 2003, 424 persons age 65 and older with injuries from falls were admitted to our Level 1 Trauma Center, which is a community hospital. Over half of these falls occurred at home. Since persons who fall are at increased risk for falling again, we developed and implemented a program in collaboration with the Colorado Volunteers of America (VOA), Safety of Seniors Handyman Program, to reduce the risk of subsequent falls in people served by our hospital. The Colorado Trust funds the program.

Methods: Eligibility requirements include age 65 or older; history of any fall within the past two years; and residing at home. Participants are recruited from the hospital's rehabilitation units and the community. The intervention consists of a nursing assessment for fall risk factors, fall prevention education, and a home safety visit by the VOA. The VOA also installs grab bars and performs minor home repairs if needed. The program is evaluated by following the participants for 12 months who report their activities and falls monthly.

Results: Sixty-one people representing 60 households have enrolled to date: 46 females and 15 males; mean age of 78 years; 14 have fallen inside their home and required medical treatment. Seniors trust and like the VOA volunteers. Safety checks have revealed that 82% of households have at least one environmental fall risk factor. Average cost of repairs is $125.00 per residence. In 258 cumulative months of follow-up thus far, none of the participants have required medical treatment for an injurious fall occurring in their home.

Conclusions: These preliminary results suggest that home safety inspections and minor home modifications by trained volunteers can help reduce a senior's risk of an injurious fall at home.

Learning Objectives: Describe the barriers to enrolling hospitalized patients in a fall prevention program; Describe environmental risk factors for falls that have been found during safety checks of seniors' homes; List the most common home modifications that were performed in seniors' homes.

Improving Understanding of Falls and Evacuation Plus Other Life Safety Concerns in Large Buildings as Bases for Improved Building Codes and Safety Standards

Jake Pauls, BArch (Pres)

Building Use and Safety Institute, Silver Spring, MD

Background: Building codes and safety standards are the most potent form of intervention for prevention of injuries associated with buildings yet research on problems such as stairway-related falls and evacuation has been relatively limited to date. Now developments in research and implementation have made—and should continue making—a difference.

Methods: Insights being gained from multidisciplinary research into the 1993 and 2001 disasters in the World Trade Center, combined with prior research findings on evacuation and stairway safety, provide impetus and technical background for improvements to requirements in codes and standards for design of means of egress in large buildings. Some developments, initiated three decades ago in Canada, became prominent in the USA, especially within the National Fire Protection Association (NFPA). Others, in New York City, include major regulatory changes for both existing and new high-rise buildings. Some of these improve safety of exit stairways, especially under conditions when lighting fails. Measures reducing the incidence and severity of falls—both in individual and crowd movement conditions—will also have implications for evacuation efficiency, a necessary condition for separating people from hazards.

Results: Beginning with Canadian research on tall building evacuation and continuing internationally today, there have been several iterations (tied to 3-year publication cycles) of improvements to means of egress requirements, especially in NFPA standards and model codes. These have improved building design, construction, use, and safety internationally.

Conclusions: Generally, the design, performance, retrofit and management of evacuation, and means of egress have been inadequately examined through systematic research, including disaster investigations. One legacy of the 2001 World Trade Center disaster—which has triggered major evacuation studies—may be a historic change to this situation.

Learning Objectives: Identify technical bases for selected improvements to building codes and safety standards related to evacuation and fall prevention. Estimate risks of stairway-related falls in tall building evacuations and generally. Describe specific environmental changes that improve safety through fall prevention and enhanced egress capability.

Safer Footwear; Cost-Effectiveness of a Possible Approach to Preventing Falls Among Older Adults

Bahman S Roudsari, MD, MPH (Pres), TD Koepsell, MD, MPH, BE Ebel, MD, MPH, MSc

Harborview Injury Prevention and Research Center, University of Washington, Seattle, WA

Background: Several studies have highlighted a possible role for footwear in relation to risk of fall among elderly persons. Relative to athletic/canvas shoes, walking barefoot or in stocking feet has been associated with an 11-fold increase in the risk of falls among elderly people, and wearing other shoe styles with a 1.3-fold increase. This study examined the potential cost-effectiveness of promoting use of safer footwear among the U.S. elderly.

Methods: Based on estimates gathered from the literature, decision analysis was used to evaluate the cost effectiveness of a one-year community-wide footwear campaign in preventing falls. This intervention would encourage use of athletic/canvas shoes in a hypothetical cohort of ambulatory elderly people. Potential savings in acute medical care costs and reduction in probability of falls were the primary outcomes of interest.

Results: In the base case analysis, the intervention saved $8 in acute medical care costs and $141 in total medical care costs per individual. The probability of a fall dropped from 25% to 23% in the intervention group. The estimated cost savings was sensitive to the probability of hospitalization after fall (range in cost savings: $3-12), the relative risk of falls comparing non-athletic/non-canvas shoes to athletic/canvas shoes ($4-12), and the campaign's success in persuading people to wear footwear rather than walking barefoot or in stocking feet ($5-12).

Conclusion: A community-wide footwear campaign may be a potentially cost-effective intervention for preventing falls and fall-related injuries. Under our base-case estimates, this intervention might save more than $3.8 billion in total medical care costs of falls among elderly people. Including this preventive strategy in multifactorial interventions, might substantially improve the cost-effectiveness of those interventions.

Training Health Professionals for Geriatric Fall Prevention: Assessment and Intervention Skills Require Concentrated Study

Holly Lookabaugh-Deur, PT, GCS, MHS[1] (Pres), A Esdale, MPH[2], L Scarpetta, MPH[2], C Barrett, PHD[3], D Bauer, MD, FACEP[4], L Thrasher, RN[4], Gary Schmekel, BSHSA, MSA[5]

[1]Generation Care, Muskegon, MI; [2]Michigan Department of Community Health, Lansing, MI [3]So What? Evaluation Resources, Okemos, MI; [4]Crittenton Hospital Medical Center, Rochester, MI; [5]Genesys Regional Medical Center, Grand Blanc, MI

Background: The Michigan Department of Community Health's (MDCH) Injury and Violence Prevention Section collaborated with two hospitals from 2002 - 05 to plan, implement, and evaluate geriatric fall prevention clinics for patients 65 and older who presented to the Emergency Department with a fall.

Objectives: Improve skills of interdisciplinary hospital providers in identifying and managing older adults' intrinsic and extrinsic fall risk factors while maximizing treatment effectiveness within a hospital reimbursement framework.

Methods: A geriatric board-certified physical therapist collaborated with MDCH and two hospitals to plan and implement training programs for interdisciplinary healthcare providers, including nurses and therapists. The therapist taught core courses addressing intrinsic and extrinsic risk factors, evidence-based intervention strategies, comprehensive fall risk and balance assessment tools, normal versus pathological aging, geriatric culture, and reimbursement/documentation. Following the core course, the therapist then taught seminars on specialized topics such as incontinence and osteoporosis management.

Results: After the training, providers expressed satisfaction with their role in the fall prevention clinic, having gained specific skills to help older adults avoid falls and become more independent. To integrate new clinical skills, providers needed to do detailed self-assessment on such skills as incontinence management, postural recovery strategies, and functional assessment with validated tools. The therapist recommended that clinicians follow each training course with integrative homework assignments and other adult learning methods.

Conclusions: Training of interdisciplinary staff and resolution of system barriers are necessary before establishment of a hospital fall clinic. Staff must have a basic understanding of normal versus pathological aging and geriatric culture related to learning and affecting change. Fall assessment and intervention skills are not entry-level and require concentrated study.

Learning Objectives: Identify ten core provider skills for comprehensive hospital-based fall prevention; Describe one method to sustain and integrate learning after the training course; Identify health provider bias as it relates to geriatric patient care.

Getting the Word Out: Community Outreach

Monday 3:00 - 4:30 PM

Advocating for Injury Control – How to Be Effective

Susan S Gallagher, MPH[1] (Pres), LC DeGutis, PhD[2]

[1]Education Development Center, CSN, Newton, MA
[2]Yale University, New Haven, CT

The decades of the 1980s and 1990s saw unprecedented and much needed growth in the recognition of injury and violence as a public health problem and in the development and evolution of injury control research centers and state injury prevention programs. Despite the improvement, injury control activities at the local, state, and national levels are still not commensurate with the magnitude of the problem. Lack of communication with policy makers is a major contributing factor.

During the 108th Congress, injury prevention issues barely surfaced. In one Senate office, exposure to injury control issues was limited to two requests for visits, one hearing, two briefings, and only two bills. This experience is in sharp contrast to the many onsite meetings requested by professionals and researchers for other diseases. How can needs be met if injury prevention professionals do not attempt to effectively communicate with policy makers and staff?

Policy makers are deluged with health information that is not useful. Effective communication requires an understanding of the context in which policy makers and staff operate, what makes information useful, and how policy makers communicate with each other. Techniques to effectively communicate with policy makers include: personal visits, the "ask," meet and greets, op editorials, timing, and making things move–advocacy groups and coalitions.

Lobbying restrictions do not apply to most of these techniques. Education on injury prevention can be provided in a nonpartisan manner with factual information about the injury problem and activities to address it in the member's home district. Every injury prevention professional can select a method to engage policy makers in a proactive manner.

Learning Objectives: Understand the type of information that is useful to policy makers and their staff; Describe six techniques for effective communication with policy makers; Understand the role of advocates in effective communication.

Designing Integrated and Sequential Injury Prevention Workshops for Adult Learners: Building the Capacity of Indian Health Service Injury Prevention Professionals

Carolyn E Crump, PhD (Pres), RJ Letourneau, MPH

The University of North Carolina School of Public Health, Department of Health Behavior and Health Education, Chapel Hill, NC

Background/Objective: This presentation describes the process by which the Indian Health Service (IHS) and staff from the University of North Carolina (UNC) collaborated to revise the content and teaching methods used in the IHS Injury Prevention (IP) Short-Course Training Program.

Methods: UNC staff worked with a 12-member IHS Revision Committee to increase the capacity of IHS staff to design, implement, and evaluate interactive teaching methods in their IP Training program. Six steps guided this process: 1) Understanding adult learning principles; 2) Practice using adult learning methods; 3) Incorporating adult learning methods into session planning; 4) Implementing revised courses; 5) Gathering feedback about teaching methods and instructor style; and 6) Improving course methods based on Short-Course evaluation.

Results: Seven core training topics were identified to guide the sequential and integration both within and across courses: 1) Injuries as a Public Health Problem; 2) Program Design and Implementation; 3) Coalitions and Collaboration; 4) Program Evaluation; 5) Injury Data; 6) Marketing/Advocacy; and 7) Program Management. The Committee was facilitated through these steps by UNC staff who provided adult learning resources, skills-building activities, materials to guide planning, and critical feedback. Committee members improved their ability to develop group exercises and interactive discussions for most course sessions. A course-long case study, consisting of six activities and a mock Tribal Council meeting, was created to integrate the IP skills presented in the course.

Conclusions: Participant evaluations, instructor comments, and UNC observations reveal successful implementation of adult learning methods in the revised courses. The process implemented to integrate content within/across courses and to incorporate adult learning principles into an agency-based IP training course is both feasible and effective at improving training opportunities.

Learning Objectives: Describe the steps taken to incorporate adult-learning principles in an Indian Health Service injury prevention training course; Identify multiple teaching methods that are effective in teaching adult learners knowledge and skills related to community-based injury prevention; Apply educational design concepts to the development, implementation and evaluation of short courses focused on injury prevention.

Mobilizing Communities for Social Change Through Primary Prevention: The DELTA Experience

Joshua Edward, BA, MK Macnaughton

State DELTA Coordinator at the Alaska Network on Domestic Violence and Sexual Assault, Juneau, AK

Background: The Domestic Violence Prevention Enhancements and Leadership Through Alliances (DELTA) Program is a program funded by the CDC to implement primary prevention/social change models through the local

coordinated community response model. To successfully develop and strengthen CCRs so they effectively implement activities that prevent domestic violence from initially occurring, it is important that partnership building efforts be ongoing and adaptive. Engaging community members and keeping them engaged is imperative to strengthening CCRs and sustaining their efforts.

Methods: Collaboratively, DELTA project staff at the state and national levels have been working to support local CCR efforts to adopt primary prevention strategies and initiate multi-level approaches to implementing activities. The primary prevention approach is an inviting and invigorating approach for community members and CCRs who have long worked to address issues of domestic violence. How to keep the efforts focused on primary prevention, while intervention continues to be a need in the community, and how to create, build, and sustain momentum toward prevention strategies are keys to the success of paradigmatic change.

Results/Conclusions: This presentation will provide an overview of the efforts of the 14 states funded through the CDC DELTA project to mobilize and sustain community collaboration efforts to implement primary prevention strategies over the past two years.

Learning Objectives: Describe statewide and national DELTA collaborative efforts to develop CCRs for primary prevention; Identify strategies for sustaining CCR efforts to implement primary prevention efforts as intervention issues arise in communities; Discuss strategies for sustaining CCRs focused on primary prevention collaborations and activities.

Results From an Empowerment Evaluation of the Indian Health Service Injury Prevention Program

Carolyn E Crump, PhD, Robert J Letourneau, MPH (Pres)

University of North Carolina, Chapel Hill, NC

Background: This presentation describes the evaluation of the Indian Health Service (IHS) Injury Prevention Program (IPP), which is responsible for providing IP services to over 1.5 AI/AN people in 35 states.

Methods: Grounded in empowerment evaluation, data collection protocols guided 12 Area site visits. The evaluators developed a Program Stage of Development Assessment Tool to assess/interpret each Area's stage of development across 12 program components (across three Tiers) at a basic, intermediate, or comprehensive level. Follow-up telephone interviews/surveys were conducted with all Areas.

Results: 108 IHS and 184 Tribal staff were interviewed, 44 focus group-type meetings were conducted, and 56 Tribes/Tribal entities were visited, culminating in 12 evaluation reports. Follow-up interviews (Area IP Specialists, RR=100%) and surveys among 31 IHS/Tribal staff (RR=45%) were completed. The ratings across components revealed, at site visits and follow-up, three rank-ordered groupings of comprehensive, intermediate, and basic programs (i.e., 25%, 42%, 33% of Areas, respectively). The Areas rated strongest in Training and Management Support components. The four weakest components (with 75% of Areas rated basic) included: Evaluation/Reporting; Marketing/Advocacy; Needs Assessment; and Surveillance.

Conclusions: Implementation of the evaluation process identified strengths of the empowerment evaluation approach (e.g., staff involvement, ability to make immediate changes) and highlighted the value of comprehensive data collection (e.g., ability to analyze patterns). The evaluation facilitated improvements in multiple components. Limitations included: a) time involved to prepare for/conduct Area evaluations; b) inability to meet all staff associated with an Area's program; and c) risk that outside evaluators can sidestep controversial issues and avoid reporting negative findings. Recommendations included: ensuring adequate IP staff; expanding IP training program; capitalizing on partnerships/collaboration; and increasing frequency of evidence-based intervention activities.

Learning Objectives: Describe the methods used to evaluate the Indian Health Service Injury Prevention Program; Discuss process-related results from the evaluation; Identify the benefits and limitations of empowerment evaluation.

SafeUSA: Helping to Increase America's Investment in Injury and Violence Prevention

Andrea C Gielen, ScD, ScM, CHES (Pres), J Gentry

Johns Hopkins Center for Injury Research and Policy, Baltimore, MD

Background/Objectives: SafeUSA was launched in 1997 by the National Center for Injury Prevention and Control, CDC with a vision of safety in America's homes, schools, communities, worksites, and transportation systems. SafeUSA is now an independent, national nonprofit alliance of organizations and agencies that is unique in its inclusion of nonprofits, businesses, and government agencies and its comprehensive mission encompassing all injuries and all age groups.

Methods: SafeUSA conducts its work through a Partnership Council, a committee structure, and an Executive Director. We have used strategic planning, national focus groups, and a literature review to identify specific goals. Our website, conference calls, and meetings facilitate communication and work toward achieving our goals.

Results: SafeUSA sponsored Focus Forums with 375 participants from 7 locations. A video tape of the results will be shown. Results were used to inform Strategy Sessions held at the 2001 "Mobilizing for a SafeUSA: A National Leadership Conference." Specific recommendations for advancing injury and violence prevention were published and will be shared. These results can be helpful to local, state, and national injury prevention professionals and have been useful in shaping our agenda. SafeUSA sponsors "Safety Matters: Seminars in Injury and Violence Prevention," which provide opportunities for dialogue with leading experts on topics that are relevant across injury and violence problems. SafeUSA's Campaign for America is currently in the planning stages and new "Report to the Nation" will be presented.

Conclusions: Future success will depend on our continuing efforts to exchange information and promote broad-based strategic coordination at all levels to build collaborative approaches that contribute to reducing intentional unintentional injuries and deaths in America.

Learning Objectives: Describe the mission, structure, and activities of SafeUSA; Identify strategies that organizations can use to increase America's investment in injury and violence prevention; State the value of bringing together the various organizations that promote injury and violence prevention to speak with one voice.

The SafetyLit Thesaurus: An International and Interdisciplinary Tool for Finding Injury Prevention and Safety Promotion Research

David W Lawrence, MPH (Pres)

Center for Injury Prevention Policy and Practice, San Diego State University Graduate School of Public Health, San Diego, CA

Background: Currently, finding relevant research requires searching many specialty databases, each of which has its own vocabulary. Professionals in at least 28 distinct disciplines conduct research in fields relevant to injury prevention and safety promotion. Each discipline uses its own terms to describe important concepts. This problem is compounded by the tendency for professional jargon to differ with the nationality of the researcher.

Objective: The SafetyLit Thesaurus is being developed to simplify the task of indexing and searching for research relevant to the field.

Methods: The development process has involved: 1) examining thesauri and glossaries from each of the relevant disciplines; 2) reviewing four years of search terms used by visitors to the SafetyLit Update service; and 3) convening panels of experts from each discipline to advise the process.

Results: To date, more than 6000 terms have been selected. Many more terms must be evaluated. These terms are being defined and placed into a suitable taxonomic hierarchy.

Conclusions: This session describes the process so far and calls for additional expert panel members to provide their input into developing the thesaurus. The SafetyLit Thesaurus will be used to index all material available through SafetyLit, the World Health Organization-affiliated, free online database of injury prevention and safety promotion research. Once this tool is incorporated into the SafetyLit database search system, abstracts of articles from over 900 professional journals, reports from scores of government agencies and organizations, and proceedings of relevant conferences will be readily available to anyone with an Internet connection.

Learning Objectives: Describe the current problems with finding relevant research published by researchers in disciplines other than public health and the solution to these problems the SafetyLit Thesaurus will provide; Describe the process of selecting terms to be included in the SafetyLit Thesaurus; Describe how interested persons may participate in the SafetyLit Thesaurus development process.

Getting the Word Out: Community Outreach

Monday 4:45 - 6:15 PM

Hitting the Bull's Eye: Should Surveillance Data or Community Perception Guide Safety Coalition Efforts?

Laura M Hall, MS (Pres), CL Ireson, PhD, RN, SS Slavova, MS, G McKee, BA, K Adams, BSN, RN

The Kentucky Injury Prevention and Research Center, University of Kentucky, College of Public Health, Lexington, KY

Background: A partnership between the Kentucky Injury Prevention and Research Center at the University of Kentucky and three safety coalitions in Kentucky has been underway to broaden local safety coalitions' capacity to address injury. The use of injury data to guide coalition efforts has been emphasized throughout the partnership. There is a disconnection between local surveillance data and community members' perception of which injuries should be targeted by coalition efforts. Overall, this paper seeks to understand the dilemma of creating locally appropriate safety messages when there is a chasm between surveillance data and local perception of leading causes of injury.

Methods: In each of the three coalition partner counties, a phone survey was conducted to assess household awareness and behaviors related to injury. Surveys conducted among 1,649 households identified people's perception of which injuries should be addressed by the local safety coalitions. To supplement data from the population-based survey, 50 interviews were conducted with community members to assess their perception of leading causes of injury in their community.

Results: Findings from the survey and stakeholder interviews suggest that community members' perception of key areas where the local safety coalition should focus attention are not always priority issues identified by state surveillance data. For example, falls are the leading injury related cause of hospitalization in 2003 among all three counties. However, community residents did not identify falls as a top priority for the safety coalition.

Conclusions: Analysis suggest that to fully understand the leading causes of injury, while incorporating community perception of top injuries into safety messages, a community-based injury survey is needed as suggested by recent World Health Organization guidelines.

Learning Objectives: Understand the dilemma of creating locally appropriate safety messages when there is a chasm between surveillance data and local community member's perception of leading causes of injury; Describe how local resident's view of which injuries should be targeted differs from the leading causes of injury in these communities; Identify possible solutions to overcoming the gap between community perception of leading causes of injury and state surveillance data.

Identifying and Strengthening Community-Level Protective Factors That Reduce the Risk of Child Maltreatment: A Case Study

David S Crampton, PhD (Pres)

Mandel School of Applied Social Sciences, Case Western Reserve University, Cleveland, OH

Background: The NCIPC's child maltreatment agenda calls for assessing the scope of the problem and identifying the causes of child maltreatment, including looking for risk and protective factors that can be modified with prevention and policy (Hammond, 2003). Much of this work is done at the individual or family level and yet, consistent with a public health approach, neighborhood and community-level protective factors should also be investigated and strengthened. The purpose of this presentation is to begin a dialogue about how we can strengthen community-level factors that reduce the risk of child maltreatment using Cleveland, Ohio as a case example.

Conclusion: The presentation will begin with a brief overview of the research on neighborhood effects as they relate to crime and public health (Sampson, Morenoff, and Gannon-Rowley, 2002). Next, we will review what is known about how these neighborhood mechanisms related to child maltreatment. Much of this research was done in Cleveland. This research combined quantitative analysis of neighborhoods with ethnographic interviews with parents and children. They found that community factors were extremely important. The neighborhoods with the highest child maltreatment rates were those with the highest rates of poverty, unemployment, female-headed households, racial segregation, abandoned housing, and population loss (Coulton, Korbin, Su, and Chow, 1995).

However, they also uncovered important differences between low income neighborhoods. For example, a quantitative comparison of predominately African American neighborhoods compared to European American neighborhoods showed that impoverishment had a weaker effect on maltreatment rates in African American neighborhoods (Korbin, Coulton, Chard, Platt-Houston, and Su, 1998). The presentation will conclude with a discussion of how these results can be investigated further and used to develop neighborhood-based strategies to reduce child maltreatment.

Learning Objectives: Describe previous research on the role of neighborhood effects in crime and public health; Identify how these neighborhood mechanisms have been examined empirically in child maltreatment research; Outline some strategies for exploring community-level factors in efforts to reduce the risk of child maltreatment.

Newspaper Framing of Fatal Motor Vehicle Crashes in Four Midwestern Cities, 1999-2000

Susan M Connor, PhD[1], Kathryn W Wesolowski, BS[2] (Pres)

[1]Case Western Reserve University, Cleveland, OH, and Rainbow Babies & Children's Hospital, Cleveland, OH; [2]Rainbow Babies & Children's Hospital, Cleveland, OH

Background: Motor vehicle-related incidents are the leading cause of death for Americans between the ages of 1 and 44. Media coverage of issues like traffic safety influences the public's perception of their importance and shapes laws, policies, programs, and resource allocations.

Objective: To examine the public health messages conveyed by newspaper coverage of fatal motor vehicle crashes and determine whether press coverage accurately reflects real risks and crash trends.

Methods: Crash details were extracted from two years of newspaper coverage of fatal crashes in four Midwestern cities. Details and causal factors identified by reporters were compared to data from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS) using odds ratios and z tests.

Results: Papers covered 278 fatal crashes, in contrast to 846 fatal crashes documented in FARS. Papers assigned blame in 90% of crashes covered, under-reported restraint use and driver's risk of death, failed to reflect the protective value of restraints, and misrepresented the roles played by alcohol and teen drivers.

Conclusions: Newspaper coverage did not accurately reflect real risk. Papers presented fatal crashes as dramas with a victim/villain storyline; as a result, papers were most likely to cover stories where a driver survived to take the blame. By highlighting crashes that diverge from the norm, focusing on the assignment of blame to a single party, and failing to convey the message that preventive practices like seat belt use increase odds for survival, newspapers removed crashes from a public health context and positioned them as individual issues. Public health practitioners can work with media outlets in their areas to draw attention to misrepresentations and change the way these stories are framed.

Learning Objectives: After this session participants should be able to: Combine data analysis and narrative analysis to define how health-related issues are being presented to the public; Describe why media and public health goals are so often at odds; Identify ways in which public health professionals can work with local media to redefine health-related issues and problems.

Social Marketing for Suicide Prevention

Ellen Freedman, MPH[1], L Bradshaw, MLS[1], R Sundararaman, MD, MPH[1], Anara Guard, MS[2] (Pres)

[1]Suicide Prevention Resource Center, Newton, MA; [2]Educational Development Center, Newton, MA

Background: There is a growing need in the field of suicide prevention to create standards and criteria for the development and use of social marketing tools. After introducing the stages of a social marketing campaign, this presentation will explore what criteria are relevant to campaigns to reduce suicide and related risk factors. Some of the factors (and questions) to consider are; 1) Does the message address the risk of contagion? 2) Has the model been evaluated for a particular audience? 3) Is the message/campaign a vehicle to refer people to treatment and can that be used as an outcome measure? 4) How critical is it to include cultural norms in the message for a particular population? We will examine some of the existing suicide prevention and depression awareness campaigns designed for specific populations and determine if they meet the criteria. Suicide Prevention Resource Center (SPRC) social marketing resources will also be introduced to assist with finding appropriate materials.

Understanding How Injury Health Stories Are Reported by Local Television News Across the United States

James M Pribble, MD (Pres), JA Hirshberg, MD, JL Boutin, BA, SV Kamat, MS, RF Maio, DO, MS

University of Michigan Department of Emergency Medicine Injury Research Center, Ann Arbor, MI

Background: Effective health communication could improve public health. Local television news is the number one source of information for most Americans and TV is their primary source for health information. Yet, little is known about how injury health stories are reported on local television news.

Objective: To systematically understand how local television news reports health stories about injury.

Methods: Content analysis of injury health stories reported on 122 local television stations from the country's top 50 media markets during October 2002. Two health professionals independently coded each injury health story and a third independent coder resolved any discrepancies. Each story was coded for injury topic, prevalence, risk factors, discussion of enforcement, engineering, education (3 E's of injury prevention), and the cost of injury.

Results: Among all health stories reported on local television news during our sample, injury was the third most common topic. Of the 156 injury health stories reported, 97 (62%) discussed unintentional and 59 (38%) discussed intentional injury. Automobile injury, fires, and medical errors were the three most common unintentional topics reported while intentional injury was dominated by domestic violence and sexual assault prevention stories. Prevalence, risk factors, and the three E's of injury prevention were only discussed in 30%, 34%, and 38% of stories, respectively. Only 1 story discussed the cost of injury.

Conclusion: Local television news regularly reaches 165 million Americans. Injury is a major part of health information reported on local television news. However, injury reporting commonly failed to discuss important elements of the injury prevention message and it is unclear whether this type of reporting may affect the public's comprehension of injury prevention or influence injury prevention policy.

Learning Objectives: Describe the pervasiveness of local television news as a source of health information for Americans; Describe the common types of injury health story topics discussed on local television news; Identify the major barriers for conveying pertinent health injury information when interviewed by a reporter.

Getting the Word Out: Community Outreach invited session*

Tuesday 10:15 - 11:45 AM

"Choose Respect": Overview of CDC's Media Campaign to Prevent Teen Dating Violence

Rita K Noonan, PhD (Pres), P Abamonte, HH Foo, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: CDC has identified violence against women, including intimate partner violence (IPV) and sexual violence, as a significant and costly public health issue. Estimates from the National Violence against Women Survey suggest that approximately 1.9 million women are physically assaulted each year in the U.S., and 1 out of 6 U.S. women have been victims of a completed or attempted rape as a child and/or adult. More than half of all rapes of females occur before age 18, and 22% occurred before age 12. The health consequences for youth experiencing this abuse are staggering. Adolescents involved with an abusive partner report increased levels of depressed mood, substance use, antisocial behavior, and, in females, suicidal behavior.

Methods: CDC conducted formative research (e.g., focus groups, expert interviews, surveys) and hired creative contractors to guide the design and implementation of a communications campaign to prevent dating abuse.

Results: After extensive research, CDC selected "Choose Respect" as the campaign theme to reach 11- to 14-year olds with positive messages about healthy relationships. Secondary audiences include parents, teachers, and other adults who care for children. The campaign will be piloted (and evaluated) in both school and community-based settings in Austin, TX, and Kansas City from February through May of 2005. Campaign products include public service announcements, posters, brochures, an educational video, a community resource kit, and an interactive video game.

Conclusions: This session will provide a general overview of the campaign to contextualize the more specific sessions that follow afterwards. More specific topics for this panel will include: formative research and findings; creative development; campaign implementation; pilot launch evaluation. The creative products themselves will also be unveiled and discussed.

Learning Objectives:
As a result of this session, participants will be able to:
1. Understand the importance of dating abuse as a public health hazard
2. Understand the rationale behind CDC's focus on middle school populations
3. Describe the key components to CDC's campaign, from formative research to community involvement

Choose Respect: Creating the "Creative" in CDC's Media Campaign to Prevent Teen Dating Violence

Pat Shifflett, RN, MS[1], Hsin Hsin Foo, MPH[2] (Pres)

[1]Constella Health Sciences, Atlanta, GA; [2]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The Centers for Disease Control and Prevention (CDC) has created CHOOSE RESPECT, a communications campaign to prevent dating abuse. The campaign targets 11- to 14-year-olds with positive messages about healthy relationships, as well as information on recognizing and avoiding dating abuse. Preteens and early adolescents are targeted because these young people are at an age when they are forming attitudes and beliefs that will affect how they treat dating partners in the future. This presentation will demonstrate methods to translate formative research into a communication plan and creative materials for the target audience. The creative products themselves will be unveiled and discussed.

Methods: Campaign designers thoroughly reviewed the literature and conducted focus group research before selecting CHOOSE RESPECT as the most effective theme for reaching the target audience with messages about healthy relationships and dating abuse prevention. Additional focus groups tested the creative concepts developed for television PSAs, radio and cinema ads, posters, and the educational video with accompanying teachers manual.

Results: The resulting materials are intended for adolescents and the caring adults in their lives.

Conclusions: After evaluating the impact and success of the pilot program, CDC will implement the campaign in carefully guided and monitored phases.

Learning Objectives:
As a result of this session, participants will be able to:
1. Identify key components of a communication plan
2. Define target audiences for a social marketing campaign
3. Describe the essential elements of a social marketing campaign

Falls Free: Promoting a National Action Plan to Prevent Falls in Older Adults

Bonita Beattie, PT (Pres)

National Council on the Aging, Washington, DC

Purpose: Falls and fall-related injuries impose an enormous burden on individuals, society, and to the nation's healthcare system. As the population of the United States ages, the negative impact of falls continues to increase. Yet many falls, and fall-related injuries, can be prevented with existing knowledge and technology. The purpose of this presentation is to provide the public health community a discussion of key elements of Falls Free: the National Action Plan to Prevent Falls in Older Adults. The Speaker will also present a stimulating discussion of next steps and collaborative initiatives planned in support of the National Action Plan.

Methods: In response to escalating concerns related to falls and fall-related injuries among the aging population, and to address the challenges and barriers related to a national falls prevention initiative, The National Council on the Aging (NCOA) spearheaded an initiative entitled Falls Free: Promoting a National Falls Prevention Action Plan. The project was launched with a two-day summit (December 8-9, 2004) at which 66 representatives from 60 diverse organizations assembled to discuss issues related to falls among older adults and to provide strategic input into the development of the National Action Plan.

Results: The outcome of the National Summit was the development of Falls Free: the National Action Plan to Prevent Falls in Older Adults, a guide for implementing effective, coordinated strategies to reduce injurious and fatal falls. The strategies put forth in this plan represent the best thinking of leading experts across diverse fields of influence. Funding for print copies has been provided by the National Center for Injury Prevention and Control.

Conclusions: This National Action Plan is offered as both a call to action and a guide for implementing an effective coordinated approach to reducing injurious and fatal falls among older adults.

Learning Objectives:
1. Participants will develop an appreciation for the complexity of this initiative driven by the growing number of falls in older adults
2. Participants will recognize the National Action Plan as a valuable resource that can be used to support federal, state, and local falls prevention initiatives
3. Participants will appreciate the need for federal, state, and local collaboration to further this agenda

Falls Among Older Adults – The Public Health Problem and Prevention Strategies

Ellen Sogolow, PhD (Pres), JA Stevens, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: This presentation will provide background information on the scope of fatal and nonfatal fall injuries among adults ages 65 and older, the impact of these injuries, major fall risk factors, and what is known about effective prevention strategies.

Methods: Several databases provided important information: National Center for Health Statistics (NCHS) Vital Records System for fatality data; National Electronic Surveillance System All Injury Program (NEISS-AIP) for data on nonfatal injuries treated in hospital emergency departments; and NCHS National Hospital Discharge Survey for hospital admissions for hip fractures.

Results: Epidemiology of falls and trends over time will be presented that expand upon the basic findings that, in 2002, 12,800 older adults died from fall injuries; 1.6 million were treated in emergency departments and, of these, 388,000 were hospitalized. Fall injuries are associated with millions in economic costs as well as significant functional impairment and reduced quality of life. Effective interventions include physical activity, medical management, and home safety. One intervention that used multiple risk factor assessment and management reduced the risk of falling by 61% while an intervention that used Tai Chi to improve balance and strength reduced fall risk 47%.

Conclusions: While more research is needed to improve our understanding of the circumstances of falls, sufficient evidence is available to take preventive action. Strategies to translate, disseminate, and implement effective programs are needed.

Learning Objectives:

1. Audience will understand the enormous extent of the older adult falls problem and its projected increase over the coming decades
2. Audience will be able to identify risk factors for falls, and distinguish those that are modifiable and those that are not
3. Audience will gain information about specific resources for further information about the epidemiology of falls and prevention strategies

Resource Centers in Action

Stephanie Bryn, MPH[1], Ellen Schmidt, MS, OTR[2] (Pres), L Decker[3], S Rich, MPA[4]

[1]Maternal Child and Health Bureau, Rockville, MD; [2]Children's Safety Network, Washington, DC; [3]Children's Safety Network, Marshfield, WI; [4]National MCH Center for Child Death Review, Okemos, MI

Background/Objectives: State and local health departments are challenged in assuring the provision of injury and violence prevention services for children and adolescents. This presentation will describe resource centers that address the injury continuum from prevention to treatment through collaboration to benefit state and local health department efforts.

Methods/Results: The panel is comprised of staff from six resource centers devoted to childhood and adolescent injury and violence prevention with various funding sources. Resource centers include: the Children's Safety Network, National MCH Center for Child Death Review, the Rural Emergency Medical Services and Trauma Technical Assistance Center, National Organization for Youth Safety, the Suicide Prevention Resource Center, and the Poison Control Center Technical Assistance Resource Center. Each staff member will provide a review of their center's mission and goals, target audience, data access and uses, topic area focus, program area focus, and communication methods. Staff will provide examples of capacity building and topical support to health departments. Staff will highlight practical examples of resource center collaboration and the benefit to state and local health departments.

Conclusions: Each resource center with a common goal of injury and violence prevention on the state and local level is a source of information and assistance to injury and violence prevention professionals. Collaboration among the network of resource centers optimizes the current level of assistance available to state and local health departments and facilitates 'one stop shopping' among overburdened public health practioners. Sharing technical information enables centers to leverage resources to best serve the customer. Together the network of centers demonstrates a model for collaboration at the state and local level.

Learning Objectives:

1. Learn how to utilize the various resource centers providing childhood injury and violence prevention
2. Understand the forms of assistance available
3. Learn how the resource centers' collaboration has benefited state and local health departments

Getting the Word Out: Community Outreach

Tuesday 1:45 - 3:15 PM

A Local Health Department Brings Injury Epidemiology and Planning to Community-Based Injury Prevention Programs

Stacy L Weinberg, MA (Pres), JL Smith, PhD, RL Vogt, MD

Tri-County Health Department, Greenwood Village, CO

Background/Objectives: Tri-County Health Department (TCHD) was selected by a large foundation to coordinate a health-related grant-making initiative in the Denver-metro region. TCHD used epidemiologic data to select unintentional injury as the health focus for the region; the county rates of unintentional injury deaths ranged from 31.0-55.5 per 100,000 population, exceeding the national target of 17.5. As the only local health department chosen for this grant-making role, TCHD brought unique expertise in epidemiology, program planning and evaluation. TCHD set an objective to enhance community capacity to develop data-driven injury prevention programs.

Methods: TCHD implemented a two-part approach to achieve this objective. First, TCHD hosted an applicant informational meeting where interested agencies were provided county-specific epidemiologic data on unintentional injury (e.g., deaths/hospitalizations by injury type) compiled by TCHD, and instructed on its use in their grant proposals. Second, after grants were awarded, TCHD trained grantees on measurable objectives, program evaluation, survey design, and data collection, analysis and presentation.

Results: This two-part approach was successful. First, many applicants used epidemiologic data to define the need in their grant proposals, demonstrating needs for older adult fall prevention, child-passenger safety, bike helmet safety, fire safety, and poisoning prevention. Second, grantees demonstrated increased capacity for data-driven program management. One grantee used evaluation data to recruit new partners, another incorporated sophisticated data analyses into their evaluation, and several grantees collaborated to collect data across their programs to provide insight into the problem of recruitment of older adults into fall prevention programs.

Conclusions: This project demonstrated that a local health department can successfully serve as a prevention funding intermediary and an epidemiology and planning resource for grantees. This approach can enhance community capacity to develop data-driven injury prevention programs.

Learning Objectives: Describe how a local health department became a funding intermediary and leveraged prevention funding to accomplish injury prevention work in an innovative manner; Explain how a local health department used epidemiologic data to raise the profile of injury prevention as a public health need and increased community capacity for data-driven program planning and evaluation; List the skills that a local health department can share with other community-based organizations to enhance their injury prevention programming.

Cost Benefit Analysis Fact Sheets for Injury Prevention Interventions

Monique A Sheppard, PhD (Pres), TR Miller, PhD, DL Hill, PhD, EA Langston, MA

CSN EDARC, Calverton, MD

Background/Objective: Interpersonal violence, substance abuse, impaired driving, open-flame, and poisonings are all major sources of injury with considerable cost to society. Interventions have been designed to reduce many of these sources of injury; however, some interventions are more effective than others. Given the limited resources available for prevention programs, it is important to identify which programs and policies produce the most benefit for the resources invested in them.

Methods: The Children's Safety Network Economic and Data Analysis Resource Center has produced a series of fact sheets to summarize the cost benefit analyses of different interventions on these issues. Interventions can be evaluated in terms of how much they cost per unit of intervention (e.g., cost per child, cost per driver) and how much benefit they produce in terms of costs averted (e.g., medical costs, work loss, quality of life, court costs, incarceration costs). These fact sheets will help injury prevention professionals, health educators, and policy makers see what interventions have been more effective, and which have been shown to produce the most benefit for the amount spent on them.

Conclusions: Some interventions (e.g., less porous cigarette paper) are relatively inexpensive and produce small but measurable benefits. Others are more expensive, but produce greater benefits (e.g., a family centered intervention to reduce substance use). In some cases a stricter policy (30% alcohol tax) produces less benefit per dollar than a moderate policy (20% alcohol tax). From these fact sheets, injury prevention

professionals, health educators, and policy makers can see what programs and policies have been effective in other areas and use this information in choosing which programs to implement in their own area.

Learning Objectives: Understand the terminology of cost benefit analyses and how cost benefit analyses can be used to evaluate interventions; Understand how cost benefit analyses of different interventions can help guide program development and policy; Identify which interventions provide the most benefit for the money invested.

Innovative Dissemination Vehicle: The CARES Mobile Safety Center

Eileen M McDonald, MS[1] (Pres), S Frattaroli, PhD[1], M Glenshaw, OT/L, MPH[1], D Young, BS[1], BL Strong, MPH, MSW[1], LB Trifiletti, MA, PhD[1], AC Gielen, ScM, ScD[1], and CARES Partnership Council[2]

[1]Johns Hopkins Center for Injury Research and Policy (CIRP), Baltimore, MD
[2]CARES Partnership Council is located in Baltimore, MD

Background/Objectives: Compared to the national average, East Baltimore children have nearly twice the rate of injury, despite the existence of effective and widely recommended interventions such as smoke alarms and car safety seats. Through a community partnership, we developed the Mobile Safety Center (MSC) to disseminate safety advice and products to low-income, urban families with young children in East Baltimore.

Methods: The MSC is a 40-foot vehicle that exhibits a variety of common household hazards in a home-like environment (e.g,, a bathroom display illustrates fall, drowning, and poisoning hazards). Fire and injury prevention specialists staff the MSC and provide personalized education to adult and child visitors. Safety products (e.g,, car seats, bike helmets, cabinet locks) are available at below-retail costs. Free safety services include car seat installations and smoke alarm referrals. The MSC travels to one pediatric clinic 3 days/week (as part of a CDC-funded evaluation study) and attends several community-based events per month. Process evaluation data are collected on utilization of the MSC and visitor satisfaction.

Results: In its first 5 months, the MSC reached 791 parents and children through 58 visits to the pediatric clinic and 11 community events. Personalized education has been well received by visitors, who report "learning a lot" about scald burn prevention (82%) and car safety seats (77%). 90% of visitors rate both the knowledge and helpfulness of the MSC staff as"excellent." 326 products and services were provided on the MSC, including 22 safety seats, 53 seat installations, and 45 smoke alarm referrals. Additional process evaluation data will be presented.

Conclusions: The MSC is proving to be an effective way to disseminate child safety education and products.

Learning Objectives: Describe the mobile safety center's (MSC) educational exhibits and injury prevention products and services; Compare and contrast the MSC's utilization and impact at a pediatric clinic and community events; Explore the benefits and challenges of implementing an innovative dissemination strategy through an academic-community partnership.

Oklahoma Bullying Prevention: A Systemic, Interdisciplinary, Statewide Approach

Hannah Brenner, JD (Pres), K Middleton, LSW, MHR, CADC

Oklahoma State Department of Health, Oklahoma City, OK

Background/Objectives: Over 12,000 incidents of bullying among youth have been reported by the Oklahoma State Department of Education each year. Related problems that stem from bullying include, poor academic performance, high drop-out rates, suicide, and future risk of incarceration. Simple research-based interventions, when implemented in classrooms, schools, communities, have been shown to dramatically reduce the magnitude of this problem. In The Oklahoma Bullying Prevention Initiative (OBPI) was formed in 2004 to address the problem of bullying and related issues in Oklahoma from a systemic, multidisciplinary perspective. The OBPI is a project facilitated by the Oklahoma Appleseed Center for Law & Justice and funded by a grant from the Oklahoma State Department of Health.

Methods: The OBPI is working to address problems of bullying from a systemic, interdisciplinary perspective, promoting research based interventions. Convening a diverse coalition of statewide nonprofit organizations, the OBPI is addressing three major objectives including policy/legislation, public awareness, and training. The OBPI will be assessed using "process evaluation."

Results: The OBPI is an ongoing project, funded through October, 2006. To date, representatives from thirty organizations have come together as part of this project, each contributing their unique, relevant expertise. Organizations include law enforcement, legal associations/law centers, parent centers, etc. For those groups not statewide in nature, a general membership has been created to include their participation and comments.

Conclusions: The OBPI may eventually evolve into a separate nonprofit or retain its current place as a project of the Appleseed Law Center. The OBPI will ultimately exist as the central, non-governmental entity that coordinates bullying prevention efforts statewide. The OBPI continues to expand its network of partners to include organizations that represent even more diverse interests.

Learning Objectives: Describe the systemic approach used in Oklahoma to address the problem of bullying and related issues; Describe the multidisciplinary approach used in convening diverse statewide partners and stakeholders to address the problem of bullying and related issues; Identify related issues to bullying that support the need for research-based interventions. The problem with bullying among youth is that it transcends beyond the incidents of violence themselves: there are far-reaching consequences like poor academic performance, future risk of incarceration and suicide that must also be considered.

Social and Character Development: Innovations in Partnership and Design

Corinne David Ferdon, PhD[1] (Pres), T Haegerich, PhD[2], L Reese, PhD[1]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]US Department of Education, Washington, DC

Background: The 2004 National Center for Educational Statistics report indicates that 659,000 students in 2002 were victims of violent crimes at school. Teachers are also frequently victimized with 9% threatened with injury and 4% physically attacked by a student during the 1999-2000 school year. Violence negatively affects children's ability to learn and teachers' ability to educate. As a result of such findings, the U.S. Department of Education's Institute for Education Sciences and the CDC's Division of Violence Prevention recently initiated a joint effort to prevent and reduce school violence through the Social and Character Development (SACD) Research Project, which incorporates innovative approaches to injury research design, intervention implementation, and evaluation while advancing the research base on social and character development. The innovative nature of this project is supported by a consortium of seven research teams located in geographically and demographically diverse locales that were selected through a program announcement for interventions on school-level social and character development interventions. Thus, rather than developing a single intervention approach and evaluating its effectiveness, the SACD Project is implementing a different intervention at each site all of which are guided by similar theoretical underpinnings and have goals to enhance socio-emotional competence among students and teachers while promoting a prosocial school climate, promoting positive behavior, reducing school violence, and promoting academic achievement. Project evaluation is two prong: 1) Each site's interventions will be evaluated; and 2) The aggregate effects will be evaluated in a cross-site evaluation that utilizes common measures. Although this design poses challenges (e.g., power), it represents a unique opportunity to better understand which interventions or intervention features work for which students and under what conditions. Program costs of implementing each intervention also will be collected to better address "real-world" implications and cost for replication.

Learning Objectives: Identify approaches to developing new partnerships to enhance injury intervention development, implementation, and evaluation; Understand some of the strengths and challenges of modified research approaches to injury intervention design and implementation; List important variables to evaluate cross-site effects and "real-world" costs of injury interventions.

The Dissemination of the Injury Free Coalition for Kids: A Nationwide Hospital-Based Community Oriented Injury Prevention Program

Estell Lenita Johnson, MA (Pres), B Barlow, MD, MA, D Roca-Dominguez, M Durkin, PhD, DrPH, SA Jacko, RN, MPH, JC Pressley, PhD, MPH

Injury Free Coalition for Kids and Columbia University, New York, NY

Background/Objectives: Injury is the leading cause of death and a major source of preventable disability in children. Mechanisms of injury are rooted in a complex web of social, economic, environmental, criminal and behavioral factors that necessitate a multifaceted, systematic injury prevention approach specific to the communities and injuries being addressed.

In an effort to address injury in 37 cities within the10 trauma regions of the United States, the Injury Free Coalition for Kids worked to develop 40 hospital-based community-oriented sites where interventions are aimed at empowering the residents of the communities to physically change their community and home environments (create safe play areas and eliminate community and home hazards) and modify their social norms (develop residents educated about injury prevention and expand the number of supervised extracurricular activities with mentors). The Coalition's efforts evolved from and are

based on the work of the Harlem Hospital Injury Prevention Program, a program that has helped to reduce the injury rate in that community by 60 percent during the last 14 years.

Methods: Work of the Coalition is carried out through collaborative efforts between physicians, community coalitions, a private foundation, and other funders who've teamed together to impact injury.

A systematic framework through which education and other interventions are implemented forms the foundation for the injury prevention efforts of the Coalition. That framework is known as the Injury Prevention Model and its navigation is carried out through a set of procedures identified as the ABCs of Injury Prevention: A) analyze injury data through local injury surveillance; B) build a local coalition; C) communicate the problem and raising awareness that injuries are a preventable public health problem; D) develop interventions and injury prevention activities to create safer environments and activities for children; and E) evaluate the interventions with ongoing surveillance.

Results: Injuries are being systematically tracked and addressed in 40 communities of 37 cities in 10 trauma regions.

Conclusions: When strong relationships are built within a community willing to address needed changes, it is feasible to develop a comprehensive injury prevention program of national scope using a voluntary coalition of trauma centers, private foundation financial and technical support, and a local injury prevention model with a well established record of reducing and sustaining lower injury rates for inner city children and adolescents.

Learning Objectives: Understand the challenges and best practice successes of the dissemination of the Injury Free Coalition for Kids®, a hospitalbased, community-oriented coalition which has been replicated in 40 hospitals of 37 cities within the 10 Federal Trauma Regions of the United States; Learn about the importance of the ABC's of Injury Prevention and the use of the Injury Prevention model when addressing the reduction of injuries; Identify key considerations that must be addressed when working to prevent injuries with community oriented programs.

Hospital-Based Interventions

Tuesday 8:30 - 10:00 AM

Addressing Alcohol and Drug Problems Among Hospitalized Trauma Patients: Recommendations From a National Conference

Daniel W Hungerford, DrPH[1] (Pres), LM Gentilello, MD[2]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]University of Texas Southwestern Medical School, Dallas,TX

Background/Objectives: Up to 50 percent of hospitalized trauma patients have an alcohol problem. Given positive results from efficacy and cost-effectiveness studies in trauma centers and other medical settings, in May 2003 CDC organized a national conference to review methods for reducing the impact of alcohol and drug use on trauma patients and make recommendations to improve care in trauma centers for these patients. Participants met for two-and-a-half days and included other federal agency co-sponsors, professional and advocacy groups, substance treatment researchers, and trauma surgeons.

Methods: The first two days experts presented varying perspectives, and participants engaged in comprehensive plenary discussions. On the final half day, participants provided feedback on draft recommendations. After the conference, organizers incorporated feedback into final recommendations which were approved by a steering committee that represented multiple professional perspectives.

Results: Publication in the *Journal of Trauma* will disseminate the seven recommendations to practicing trauma surgeons around the world. The recommendations are: 1) Disseminate evidence about intervention efficacy; 2) Make screening and brief interventions routine practice, not just a research activity; 3) Make alcohol interventions an essential component of trauma care for trauma center certification; 4) Fund implementation research that involves the trauma community; 5) Improve public health reporting of substance use problems in trauma centers; 6) Change insurance regulations that deny payment for medical treatment of patients presenting with alcohol-related injuries; 7) Reimburse trauma centers for alcohol and drug screening, brief intervention, and referral.

Conclusions: This presentation will describe the recommendations in greater detail and how, after the conference, they have been used to change professional policies and legislation.

Learning Objectives: After the session, participants will: Be able to describe the impact of alcohol problems on trauma centers and trauma patients; Understand screening and brief intervention programs for alcohol problems; Be able to identify the legal, policy, and professional changes required to make screening and brief interventions for alcohol problems the standard of care for trauma patients.

Recidivism Among Adolescent Participants in a Trauma Center-Based Injury Prevention Program Focused on Alcohol and Drug Education

Pamela W Goslar, PhD (Pres), D Reber, MSW

St. Joseph's Hospital and Medical Center, Phoenix, AZ

Background/Objectives: Alcohol use among youth is a major risk factor for injury. The purpose of this study was to quantify recidivism and related characteristics of youth completing an injury prevention program for first time offenders of underage drinking laws as part of a program evaluation.

Methods: A stratified random sample based on completion status of 400 of 1,355 youth referred to the program was selected. Computer records on ticketed offenses were reviewed. Thirty-nine referrals were excluded where participants could not be matched with court records. Seven were excluded due to re-offense prior to program. Gender and age were tested for differences between groups. An odds ratio and 95% confidence interval were computed.

Results: Analysis was completed for 354 cases (n=271 program completion, n=83 non-completion). The non-completion group was slightly older (18.25 vs 17.86 years of age, p-value = 0.035). Gender was non-significant (p-value = 0.654). The recidivism rate for those completing the program was 5.2% compared to 10.8% among non-participating referrals. While not statistically significant, the odds ratio (2.23, 95% CI [.929,5.363]) may indicate an important association between program completion and re-offense. 9 of 11 multiple offenders were over 18.

Conclusion: Re-offending was more than twice as likely among youth not completing the program. This program appears effective in reducing recidivism among youthful first time offenders of underage drinking laws. Literature regarding adolescents' participation in and recidivism following prevention programs is limited. Issues related to tracking recidivism must be addressed. Risk factors associated with rapid and/or repeated re-offending should be analyzed more closely. Further research is needed to determine whether it is the program or other factors responsible for the lower recidivism.

Learning Objectives: At the conclusion of the presentation, the participant will be able to: Describe the Trauma Center based drug and alcohol education program designed to reduce injury among adolescents due to impaired driving; Identify the characteristics and recidivism rates associated with program participants and those referred to, but not participating in the program; Understand limitations and issues related to measuring recidivism in similar programs.

Safety in Seconds (R): Innovative Safety Communication in a Pediatric Emergency Department

Lara B Trifiletti, PhD[1] (Pres), WC Shields, MPH[2], EM McDonald, MHS[1], AC Gielen, ScD[1]

[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
[2] Health Communication Research Laboratory at Saint Louis University, Saint Louis, MO

Background/Objectives: Baseline results of a theoretically informed and innovative intervention addressing child safety in a Pediatric Emergency Department (PED) serving a high risk, inner city population are presented. This intervention targets use of car safety seats, smoke alarms, and poison storage because these are countermeasures known to prevent leading causes of injury. The intervention, based on the Precaution Adoption Process Model (PAPM), combines principles of health communication with computer technology to deliver feedback from a computer kiosk. Using PAPM stages, we describe parents' readiness to adopt home and motor vehicle safety behaviors.

Methods: A randomized controlled trial involving 1000 families with young children is being conducted. Parents are randomly assigned to receive the tailored Safety in Seconds (intervention) or a personalized health magazine (control). A pre-determined staging algorithm is used to classify parents according to their level (i.e., stages) of safety practices. Primary outcome measures are changes in stages over a four month follow-up period.

Results: To date n=97 parents have been enrolled in the intervention group; at the time of presentation, our estimated sample will be n=200. Descriptive statistics will be used to present stage distributions for each behavior. Socio-demographic covariates will also be presented. Initial data indicates for smoke alarms 56% are in maintenance, 17% for car seats, and 61% for poison storage.

Conclusions: Findings from this study will contribute to a better understanding of how behavioral sciences theories can help to understand parents' safety behaviors. Results from the baseline interview will demonstrate the extent to which this large sample of low income, urban families are able to effectively protect their children from injury and will identify intervention needs in this high-risk population.

Screening Injured Patients for Problem Drinking by Telephone: Feasibility Study

Carolyn DiGuiseppi, MD, MPH, PhD[1] (Pres), C Goss, MA[1], D Magid, MD, MPH[2], S Xu, PhD[2], A Graham, MD[2]

[1]University of Colorado Health Sciences Center, Denver, CO
[2]Kaiser Permanente Health Plan of Colorado, Denver, CO

Background/Objectives: Brief interventions for problem drinking among seriously injured patients reduces injury risk. Screening injured patients for problem drinking may be difficult in urgent care clinics with rapid patient turnover. We compared telephone screening after discharge to screening in clinic.

Methods: We conducted a controlled trial among acutely injured adult patients in urgent care clinics, assigning screening strategies systematically by week. During telephone weeks, we mailed study information to patients post-visit, then called them. During clinic weeks, we recruited patients in the waiting area. The study questionnaire incorporated the AUDIT-C. We examined the ratio of patients screened to patients who were potentially eligible based on age, facility, visit date, and diagnosis in electronic records. We assessed problem drinking identification and patient willingness to participate in a (hypothetical) lifestyle intervention trial. Differences were analyzed with nonlinear mixed models using Generalized Estimating Equations, controlling for age, sex, and facility.

Results: We enrolled 29% (469/1609) of injured patients, and 76% of contacted, eligible patients. Common injury causes included falls (30%) and sports (26%). 23% screened positive (AUDIT-C ≥4) for problem drinking. Telephone contact was as effective as clinic contact for enrolling and screening patients (OR=1.05; 95% CI 0.59-1.87) and identifying problem drinking (OR=0.97; 95% CI 0.54-1.74), and better for eliciting willingness to participate in an intervention trial (OR=1.49; 95% CI 0.97-2.30). Clinic recruitment required 156 staff hours/week versus 44 hours/week for telephone recruitment.

Conclusions: Telephone contact after discharge was as effective as clinic contact for screening injured patients and identifying problem drinking, required fewer staff hours, and avoided disrupting patient flow. Telephone screening appears to be feasible for identifying injured patients for brief intervention trials or treatment programs.

Learning Objectives: Learn the effectiveness of screening by telephone versus in the clinic for identifying problem drinking among acutely injured patients; Understand differences between telephone and clinic screening in terms of the population enrolled and screened; Learn how different recruitment methods affect patient willingness to participate in intervention trials.

The Connecticut Health Initiative for Identification & Prevention (CHIIP) Tool – A New Opportunity to Evaluate a Hospital Policy Regarding Victims of Violence for Best Practice and JCAHO Standards

Katherine Smith, MSW (Pres)

St. Francis Hospital and Medical Center, Hartford, CT

Background: The CHIIP Program (Connecticut Health Initiative for Identification & Prevention) developed an innovative, state-wide response to domestic violence. One significant facet of the program is policy evaluation, enabling hospitals to improve their response to victims of violence. Utilizing a standardized instrument, the CHIIP Tool, evaluates policies for both best practice and JCAHO standards.

Results: The CHIIP Tool seeks to make sustainable changes by improving institutional policies regarding identification and intervention of victimized patients. The evaluation component of the CHIIP Program reviews each hospital's policy in the state and assesses its compliance to JCAHO standards as well as best practices. It identifies lapses and provides recommendations for improvement. It is believed that policy improvements, in conjunction with provider training, will make the most sustainable changes.

Method: The CHIIP Tool measures best practice and JCAHO standards and provides guidelines for achieving these standards regarding domestic violence, specifically for individual institution's policy deficiencies. A common tool was adapted, and best practice norms were then correlated with JCAHO standards that assess care to abused patients, cultural competency, and accessibility to services. Results are provided with specific technical recommendations for improvements, ultimately improving the care of patients affected by domestic violence. The CHIIP project will also be able to develop aggregate data on the state's initiatives to reduce domestic violence.

Conclusion: The CHIIP Program has the potential to change the climate of health care institutions across the country in regards to the care of abused patients. This presentation provides guidelines for implementation and utilization of the policy evaluation instrument used to implement these sustainable changes. These efforts can be easily replicated by individual institutions and statewide initiatives.

Learning Objectives: At the conclusion of this presentation, the participants will: Understand the basic tenets of the CHIIP Program- a statewide approach to hospitals implementing policies regarding screening for victims and perpetrators of DV; Illustrate use of the CHIIP tool as a new instrument for hospitals to cost-effectively evaluate their policy for both best practice and JCAHO standards, improving care to abused patients in their own institution; Review the multi-level evaluation of this tool as currently being implemented statewide in Connecticut.

Violence Against Emergency Department Workers

Donna Gates, EdD, RN[1] (Pres), CS Ross, MD, JD[1], L McQueen, MSN, RN[2]

[1]University of Cincinnati, OH; [2]Northern Kentucky University, Highland Heights, KY

Background/Objectives: The purpose of the study was to survey emergency department (ED) workers about the violence they experience from patients and visitors. The ED is a high risk environment due to the number of patients and visitors using drugs and alcohol or having psychiatric disorders or dementia; presence of weapons; the inherent stressful environment; and the flow of violence from the community.

Methodology: Study population included workers who interacted with patients or visitors and included nurses, physicians, paramedics, physician assistants, social workers, patient care assistants, unit and registration clerks, schedulers, and patient representatives. A 31 item survey was distributed to 600 ED workers in five hospitals in the Midwest. Study variables included frequency of assaults, verbal and sexual harassments, and verbal threats during the previous six months; reporting frequency; injuries and lost workdays; assault risk factors, and job satisfaction. Descriptive and bivariate analyses were done.

Results: Two hundred forty-two surveys were returned. In relation to violence from patients, 94% had been verbally harassed, 66% had been verbally threatened, 39% had been sexually harassed, and 48% had been assaulted. Sixty-five percent of those assaulted never reported the incident. Rates of violence from visitors were also high. Sixty-three percent of subjects had no violence prevention training within the previous year. Alcohol and drug use by patients were the most frequently cited risk factors for assaults.

Conclusions: This study confirms that EDs are high-risk workplaces for violence. Prevention efforts need to include education, security, environmental controls, and violence prevention policies. Improved reporting is needed to document risk factors and plan appropriate interventions. Further research is needed to test violence prevention strategies.

Learning Objectives: Describe the incidence of violence against ED workers from patients and visitors; Identify risk factors for violence against ED workers; Describe strategies to prevent violence against ED workers.

Injury and Violence Among Children

Monday 3:00 - 4:30 PM

Child Care Center Policies and Practices and Parental Compliance With Child Restraint Laws for Children Aged 4-8 Years

Sallie Thoreson, MS[1] (Pres), C Goss, MA[2], L Myers, MPH[3], B Bailey[1], C DiGuiseppi, MD, MPH, PhD[2]

[1]Colorado Department of Public Health and Environment, Denver, CO
[2]University of Colorado Health Sciences Center, Denver, CO
[3]El Paso County Department of Health, Colorado Springs, CO

Background/Objectives: We examined parental compliance with Colorado child restraint laws, which require car or booster seats for ages 4-5 and seat belts for ages 6-15, in relation to child care center policies and practices.

Methods: Population: Licensed child care centers caring for children aged 4-8. Directors were surveyed about center policies and practices and knowledge of restraint laws. During one afternoon/center, we surveyed adult drivers who picked up children aged 4-8 and observed restraint use. We performed logistic regression with a random effect for centers, controlling for sociodemographic characteristics.

Results: Of 43 participating directors, 71% did not know Colorado's booster seat law, 36% were uncomfortable asking parents to use restraints when transporting children, 32% never discussed child restraints with parents, and 70% lacked a written restraint use policy. Of 818 cars screened, 669 (82%) drivers consented. Among enrolled children aged 4-8, 49% used booster seats, 16% car seats, 33% seat belts, and 2% no restraint; 72% were legally restrained. Children were more likely to be restrained legally if the center director talked to parents at least monthly about restraint use (OR=2.1; 95%CI 1.2-3.7). Having a written policy and feeling comfortable talking to parents about restraints were modestly but not significantly associated with legal restraint use.

Conclusions: Few child care centers have restraint use policies for children being transported to the center. Many directors are uncomfortable talking to parents about child restraint use and rarely do so. Children attending a center where the director frequently talked to parents about child restraint use were more likely to comply with restraint use law. Booster seat promotion programs directed toward child care center directors may increase appropriate child restraint use.

Learning Objectives: Understand knowledge, policies and practices about child restraint laws among a sample of child care center directors; Understand child restraint practices among children aged 4-8 attending child care; Identify relationships between child care center practices/policies and legal restraint use by children aged 4-8.

Heat-Related Deaths to Young Children in Parked Motor Vehicles

Anara Guard, MS (Pres)

Education Development Center, Newton, MA

Background/Objectives: Each year, several dozen young children die while in parked motor vehicles, primarily from heat-related causes. These deaths occur infrequently in any one location but are often well-covered by news media. An analysis of more than 200 such deaths since 1995 was conducted to understand the circumstances of heat-related fatalities and inform prevention efforts.

Methods: Searches of news-related websites and Internet services (e.g., Google news, Lexis-Nexis, Newsfinder) retrospectively identified potential cases of heat-related deaths. A database was constructed to collect the information; deaths that met the case criteria were analyzed for patterns. Additional details were sought from reporters and investigators; death certificates and autopsy reports were consulted when available. Information was collected on prevention campaigns run in communities where deaths occurred.

Results: Most deaths were to children under age 5 and occurred in almost every state. Three-fourths of fatalities were children left by adults; one-quarter were children who entered the vehicle themselves. A significant number were left by child care providers or drivers; many deaths occurred during changes in routine or family upheaval. Although many adults were unaware they were leaving children behind, others deliberately left the children to run errands, socialize or go to work.

Conclusions: Many heat-related deaths can be prevented through educating parents and caregivers to keep cars locked when not in use, implementing informed transportation policies, passing relevant laws, and working with vehicle and safety seat manufacturers to develop warnings and other design features. Child care providers, child traffic safety advocates ,and those concerned with preventing child abuse and neglect can work together to reduce the number of incidents where children are left unattended in motor vehicles.

Learning Objectives: Participants will learn about the causes and circumstances of deaths to young children in parked vehicles. At the end of the session, participants will be able to: Describe four potentially fatal hazards to children left unattended in vehicles; Describe educational, environmental and enforcement methods to reduce these deaths; Identify opportunities for educational campaigns to warn adults about the risks of unattended children in vehicles; Identify potential partners in their state who can assist them in working on this issue.

Sleep-Associated Deaths With Reducible Risk Factors Among Infants in Arizona From 1999-2001

Ann N Partap[1], Curt Bay, PhD (Pres), MD, MPH[4], JW Sales, MD, MPH[2], N Kavathi, BA[3]

[1,3]Arizona Center for Community Pediatrics, Phoenix, AZ
[2,4]Maricopa Medical Center, Phoenix, AZ

Background/Objectives: The Back to Sleep Campaign is measured by the decline in SIDS rates, although it also promotes safe sleep environments to prevent unintentional asphyxiation. Arizona's Child Fatality Review Program (ACF) reports asphyxiation deaths separately, which may lead to underestimating the overall rate of infants dying due to unsafe sleep practices. The study objectives were (1) describe infant deaths in Arizona attributable to reducible sleep-associated risk factors; (2) identify any needed changes to ACF tracking; (3) identify any needed changes in risk reduction strategies.

Methods: A descriptive analysis of ACF secondary data from January 1999 through December 2001 for infants 28-364 days with SIDS, unintentional asphyxiation, or suffocation as a cause of death.

Results: 134 sleep-associated deaths occurred, with 104 due to SIDS and 30 due to sleep environment. Identified risk factors included prone/side position (n=77), sleep surface (n=11), bedding (n=8), bed sharing (n=7); 25 had unknown sleep position. Overall, 79% of deaths had reducible risk factors. Among this group, 17% were African American while only 3% of Arizona births; 70% were Medicaid enrollees versus 45% of births and 75% were male while only 51% of births.

Conclusion: Sleep-associated death was the leading cause of death for Arizona infants from 1999-2001. Most infants died with a reducible risk factor addressed in the Back to Sleep Campaign. Categorizing all sleep-associated deaths together with high-risk versus low-risk subgroupings may offer an improved strategy for tracking preventable deaths. Reasons for the higher death rates among African Americans, Medicaid enrollees and males needs further study. Results identify a need for Arizona to broaden its safe sleep campaign and target higher risk groups.

Learning Objectives: Describe the population of infants in Arizona who die from either SIDS or other sleep-related deaths with risk factors addressed in the Back to Sleep Campaign; Describe a model that categorizes sleep-associated infant deaths with subgroupings of high risk and low risk, to improve infant mortality tracking; Outline strategies for improving public health risk reduction efforts for sleep-associated infant deaths.

Socialization Strategies, Behavioral Compliance, and Childhood Injuries

Robert Cole, PhD (Pres), H Kitzman, PhD, K Arcoleo, MPH, E Anson, BA, C Koulouglioti, RN, MS, J Feng, PhD, S Groth, PhD

University of Rochester School of Nursing, Rochester, NY

Background/Objectives: Identifying injury risks associated with the characteristics of children and their mothers, the mothers' socialization strategies and the safety of the environment requires an understanding of the interaction among these factors and an additional focus on the children's compliance with a coherent set of safety practices that will protect them in the absence of adult surveillance.

Methods: Interview and observation of an economically and racially diverse sample of 278 mothers and their three-year old children and a one year follow-up interview. Observation and self-report measures of temperament, mother-child interaction, and the child compliance with behavioral prohibitions both in the presence of the mother and when alone. Injury data were data obtained from the mother interview and a review of the children's medical records.

Results: Between 18 and 72 months, 82 children had sustained 125 medically attended injuries. As predicted, observed child compliance is inversely related to the number of injuries (estimate=.024, $p < .001$) even after controlling for SES, education and race. Compliance in turn is directly related to positive discipline ($b=5.02$, $p < .01$) and inversely related to power assertive/controlling discipline ($b=13.08$, $p < .001$). The effects of both types of discipline are strongly moderated by child temperament. High power strategies are moderated by observed fearfulness ($p < .001$) and positive discipline is moderated by observed inhibitory control ($p < .02$).

Conclusions: An understanding of child temperament and maternal supervision alone may be insufficient to predict unintentional injuries. Child noncompliance places a child at risk. Noncompliance arises from an interaction of temperament and discipline. Interventions focused on reducing risk by improving supervision and parenting cannot assume simple main effects on child behavior and injury; they must take into account the moderating effect of child temperament.

Learning Objectives: Understand the role of child compliance in injury prevention; Understand the complex interaction of socialization practices and child temperament in promoting compliance; Understand the value of direct observation in the study of parenting.

Child Passenger Safety for Inner-City Latinos: New Approaches From the Community

Molly A Martin, MD[1], Janet A Holden, PhD, MAPP[2] (Pres), K Quinlan, MD, MPH[3]

[1]Rush University Medical Center, Chicago, IL; [2]University of Illinois at Chicago, Chicago, IL; [3]University of Chicago, Chicago, IL

Background/Objectives: Motor vehicle crash injuries are the leading cause of death for children in the United States. We partnered with a community center where community health workers provide child safety seat (CSS) education using a seat belt demonstrator in order to evaluate the ability of this program to improve CSS usage in urban low-income Latino families. The demonstrator is used because many families do not have consistent access to one vehicle.

Methods: This study used a series of CSS check events to compare CSS usage in families who had received education from the community center to similar families who had not received the intervention. The community center invited families who had previously received their services to attend the events. Comparison group participants attended in response to a series of general community announcements.

Results: Seventy-nine families participated in the study resulting in a total of 119 child restraint systems checked. Seven of 44 (16%) CSS from the intervention group were correctly installed versus none in the comparison group (p=0.03). The intervention group also had more correct individual components of CSS installation. No significant differences were noted among the intervention participants who had received education only on the office demonstrator compared to those where a child passenger safety technician helped install the CSS in their vehicle.

Conclusions: Families who participated in this unique community center program were more likely to install their CSS correctly than similar families who did not receive the program services. Improvements in CSS installation and usage in urban low-income Latino communities can result from education provided by community health workers trained as child passenger safety technicians using a seat belt demonstrator.

Learning Objectives: Identify barriers to child safety seat usage in urban low income Latino communities; Describe how community health workers can provide child passenger safety education in this community; Describe how a seat belt demonstrator can be incorporated into child passenger safety education.

Injury and Violence Among Children

Tuesday 8:30 - 10:00 AM

Community Partnerships for Safe School Playgrounds

Lorann Stallones, MPH, PhD (Pres), I Kakefuda, J Gibbs-Long

Colorado Injury Control Research Center, Department of Psychology, Fort Collins, CO

Background/Objectives: The purpose of the study is to describe results of a school based intervention to reduce school playground injuries in two schools located on a reservation in Wyoming.

Methods: Staff from the National Program for Playground Safety (NPPS) completed assessments of school playgrounds and provided training to school staff based on the NPPS SAFE Model which addresses supervision, age appropriate equipment, falls to surfaces, and maintenance of equipment. SAFE playground assessments were done pre- and post-intervention. Pre- and post-knowledge/attitude assessments were completed by school staff. Community readiness interviews were conducted within the two communities and a control community to determine if there were changes in community readiness to be involved in school injury prevention before and after intervention. Injury logs were obtained from intervention schools.

Results: Intervention school#1 scored 2.5/7.0 pre-intervention; 4.3/7.0 post-intervention. School#2 reported an assessment of 3.5 pre- and 5.3 post-intervention. Incorrect responses to knowledge questions decreased significantly from pre- to post-intervention (4.27 to 3.09 [p=0.01]). No significant differences were found in attitudes pre- and post-intervention. Community readiness scores indicated an increase in readiness to prevent school playground injuries in one of two school districts; the control community showed no change in readiness score. School injury rates increased over the intervention period.

Conclusions: Improvements in school playgrounds based on the SAFE Model were obtained through the intervention. Injury rates were not responsive to these improvements. In order to document a link between playground improvement and school-based injuries, studies need to be conducted over longer periods.

Learning Objectives: Understand the relationship of community climate and school playground interventions; Describe the SAFE Model for playground safety assessment; Understand limitations of the intervention.

Factors Associated With Teaching as an Injury Prevention Strategy for Toddlers

Diane G Winn, RN, MPH[1], Craig L Anderson, PhD, MPH[1] (Pres), PF Agran, MD, MPH[1], KA Babb, PhD[2]

[1]University of California-Irvine, Orange, CA
[2]University of Windsor, Windsor, Ontario, Canada

Background/Objectives: Teaching safety rules is not an effective injury prevention strategy for toddlers and may elevate risk of injury, particularly when used in place of environmental approaches and supervision. This study examined the extent to which mothers of toddlers selected teaching as a strategy to prevent injuries.

Methods: Home interviews were conducted with 181 mothers of children 27-30 months. We used scenarios to examine mothers' selection of barriers, supervision, teaching and other measures to manage risks related to drowning, poisoning, and pedestrian injury. After reading each scenario, mothers were shown a list of strategies. They were asked to assign the importance they would place on each strategy for preventing injury to their child by distributing 30 chips.

Results: Teaching the toddler to avoid the hazard was the only strategy that had consistent scores across the 3 scenarios (reliability = .68). 23% of mothers placed 1/3 or more chips on teaching on one or more of the scenarios. Use of teaching was more common with the pedestrian and poisoning scenarios. 21% of mothers assigned > importance to teaching than to effective strategies. Teaching was correlated to lower knowledge of child development, higher expectations for the child, lower education, and speaking Spanish ($p<.02$). Spanish speakers placed more importance on teaching and less importance on barriers than the other groups ($p<.02$).

Conclusions: Mothers with unrealistic expectations of toddlers' developmental abilities were more likely to select teaching as an injury prevention strategy. Educational programs regarding child development are indicated. There is a need to explore reasons why Spanish speaking mothers more often selected teaching in place of barriers.

Learning Objectives: Describe the study approach used to elicit mothers' selection of injury prevention strategies; Identify three factors associated with mothers' selection of teaching hazard avoidance as an injury prevention strategy for toddlers; List two groups that may benefit from education regarding inappropriate use of teaching to prevent injuries to toddlers.

Nurses for Newborns Foundation: Unique Home-Visitation Program That Serves Infants at High Risk for Injury

Ben Cooper[1], Sharon Rohrbach (Pres), RN[1], M Lutenbacher[2], PhD, T Woodard[3], MFT, J Wheaton, MPH[3]

[1]Nurses for Newborns, St. Louis, MO; [2]Vanderbilt University, Nashville, TN; [3]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: In 1991, Nurses for Newborns Foundation was founded to provide for the healthcare needs of high risk and premature newborns discharged from St. Louis, Missouri, hospitals. These infants were at greater risk of abuse, neglect, and death, often because their parents lacked the knowledge, skills, and resources to care for them. The St. Louis office has served over 13,000 families and currently serves families in 29 Missouri counties. Referrals are received from 19 Missouri hospitals and over 100 community agencies.

Objectives: This presentation will highlight an innovative and unique home visitation program that has demonstrated success at reducing child maltreatment and unintentional injury in an at-risk population of women and infants.

Methods: Most referrals are received from hospital social workers who identify high risk families during the early postpartum or prenatal period. Home visits are conducted by highly skilled, registered nurses with five or more years of experience in a nursery or neonatal intensive care unit. Specifically the nurses assess risks for poor health outcomes, including risks for injury, and educate families on parenting, healthy living skills, and injury prevention strategies.

Results: During the 2003 evaluation period, 479 families completed one of four programs (i.e., received 6 or more home visits). From this group, 97% of families had no substantiated reports of abuse or neglect, babies had an 88% immunization rate, 98% of babies did not suffer an injury from a household safety hazard, and 99% of the babies were not hospitalized for preventable causes.

Conclusion: Nurses for Newborns provides a model of care that could be replicated in many other rural and urban settings nationwide, particularly in those areas with limited access to care.

Learning Objectives: Describe the key components of this home visitation model. Describe how Nurses for Newborns is successful at preventing child maltreatment and unintentional injury. Learn how this model can be replicated within various settings.

Nurses for Newborns: A Nurse Home Visiting Model to Prevent Unintentional and Intentional Injury and Improve Maternal/Child Outcomes

Tiffanee Woodard, MFT[1] (Pres), J Wheaton, MPH[1], P Temple, MD[2], M Lutenbacher, PhD[2], S Rohrbach, RN[3], and B Cooper[3]

[1]1Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]Vanderbilt University, Nashville, TN; [3]Nurses for Newborns, St. Louis, MO

Background: In 2001, child protective services confirmed 903,000 cases of child maltreatment; 59% suffered neglect, 19% were physically abused, 10% were sexually abused, and 7% were emotionally or psychologically abused. Recent research supports home visitation as an effective strategy for child maltreatment prevention. Several home visitation models offer varying interventions for the different needs of families. Early childhood visitation programs rely on a multifaceted approach to address the dynamic nature of this problem and promote healthy home environments, and child and family development emphasizing a great need for evaluating such programs.

Methods: Nurses for Newborns targets high-risk families by providing four interventions tailored to the diverse aspects of child and family development with the goal of improving family and child health. In 2003, CDC, Nurses for Newborns Foundation, and Vanderbilt University began collaboration with the following objectives: 1) to expand program services, and 2) to develop an evaluation design. This presentation will highlight the evaluation design process.

Results: The first step in the evaluation design process was to examine the components of the Nurses for Newborns program. Although the primary focus of this program is child maltreatment prevention, it became clear the program was also addressing risks for other forms of violence and unintentional injury. Next a logic model was developed to depict the broad array of activities, outputs, and expected short- and long-term outcomes of all four intervention models, which is being utilized to plan various evaluation studies.

Conclusion: Strategies developed within this program address overall maternal, child, and family health indicators but also unintentional and intentional injury prevention. This collaboration underscores the need for multidisciplinary collaboration and evaluation of promising practices in the field of injury prevention.

Learning Objectives: Identify the impact of child maltreatment in the U.S.; Describe the CDC, Nurses for Newborns, and Vanderbilt University collaboration and evaluation process; Examine the implications of cross-cutting injury prevention.

Potential of Child Death Review to Address Infant Injury Deaths Previously Diagnosed as SIDS

Mary D Overpeck (Pres), DrPH, S Bryn, MPH, M Sheppard, PhD, D Hill, PhD, T Covington, MPH

US Health Resources and Services Administration, Rochville, MD

Background/Objectives:

1. Describe diagnostic shifts and changing perceptions of Sudden Infant Death Syndrome (SIDS) resulting in more sudden unexpected infant deaths classified as injuries
2. Describe results of Child Death Review death scene re-enactments demonstrating death circumstances causing either suffocations or strangulations due to sleep environment
3. Demonstrate nationally increasing trends in infant suffocation deaths occurring while established interventions are hampered by lack of adequate information on death certificates

Methods: National vital statistics on infant deaths are used to demonstrate shifts in SIDS and infant injury deaths from 1991 to 2001. Introduction of new classifications for sudden unexpected deaths (SUID or SUDI) in the ICD-10 are investigated as one alternative used by medical examiners and coroners due to dissatisfaction with ambiguity of SIDS diagnoses. Causes of death demonstrated by death scene re-enactments to be asphyxia or suffocations are reviewed for consistency with sleeping circumstances previously attributed to SIDS. Mechanisms of asphyxia and suffocation associated with sleeping positions, sleeping surfaces, and other factors are described. Changes in SUID/SUDI and injury mortality rates since transition to ICD-10 classifications are reviewed. Injury death rates and proportions for 1999-2001 are shown by cause.

Results: National infant injury mortality and mortality attributed to sudden unexpected infant death with cause unknown has increased since 1998. Deaths attributed to suffocation account for more than 60% of all unintentional infant injury deaths. Asphyxia or suffocation deaths classified as occurring in cribs or beds represent almost 30% of unintentional deaths with an additional 8% attributed to obstructive and inhalation suffocation. Classification as suffocation, with no other information available, accounts for 12%. Among intentional deaths, suffocation accounts for 18 percent - but the mechanism of death is unavailable for all more than 60% of deaths considered due to abuse, neglect, or assault which may be attributed to inadequate sleep conditions in some cases.

Conclusions: Death certificates and vital records lack the specificity needed to support implementation of well-established interventions for sleeping deaths of infants. Circumstances described through Child Death Review teams are needed to supplement existing data systems in order to reduce unexpected infant deaths.

TRIP Paves the Way to Injury Reduction

Joann Moss, BBA (Pres), SJ Smith, RN, MSN

Children's Hospital of Michigan, Detroit, MI

Background/Objectives: Nationally, more children under age 14 die from unintentional injuries than from cancer, birth defects, heart disease, homicide, and pneumonia combined. The irony: trauma is the only preventable disease. It is estimated that 90% of unintentional injuries can be prevented. In 2000, Children's Hospital of Michigan established the Trauma Related Injury Prevention Program (TRIP), a comprehensive injury prevention program, in an effort to reduce injury risks to metropolitan Detroit area children.

Methods: TRIP targets the leading causes of unintentional child injuries: motor vehicle, fire and burns, airway obstructions, poisonings, falls, drowning, firearm, bike and pedestrian injuries. Through the sponsorship of Kohl's Corporation, the program offers school-based injury prevention education free of charge. Pretests, posttests, and speaker evaluations are used to monitor the program's effectiveness. In addition to education, TRIP sponsors/collaborates with other organizations such as Safe Kids and Injury Free Coalition for Kids to present community events aimed at distributing safety items, free or at a reduced cost, which promote safety conscious behavior modification.

Results: Currently, 66 schools are enrolled in the TRIP Program, educating over 23,000 students and 4,000 adults. Tests show an average increase of knowledge of 72%. In 2004, 636 car seats were inspected (of which 92% were incorrectly installed) and 143 were distributed. TRIP fitted 4,910 helmets, distributed 85 trigger locks, and installed 820 smoke alarms.

Conclusion: Areas for improvement include streamlining data collection and increasing consistency in participant response. Further studies need to be done to determine knowledge retention and the correlation between the program and injury reduction. A long-term goal of the program is to have injury prevention education included in every school's curriculum.

Learning Objectives: To describe the main components of school-based injury prevention education; To identify opportunities for injury prevention community outreach; To research the impact of the program on injury prevention knowledge.

Injury and Violence Among Children

Tuesday 10:15 - 11:45 AM

A Campaign to Increase Awareness About Child Product Recalls

Katharine Fitzgerald[1] (Pres), M Borges[2]

[1]Children's Hospital & Regional Medical Center, Seattle, WA
[2]Injury Prevention Program, Washington State Department of Health, Olympia, WA

Background/Objective: Each year, the U. S. Consumer Product Safety Commission (CPSC) issues over 300 product recalls, about half of these involve children's products including cribs, playpens, strollers, high chairs, toys and clothing. In spite of CPSC's recall notices, many parents, caregivers, and child care providers remain unaware of the products recalled for safety reasons. CPSC estimates that over 69,000 children under age 5 were treated in emergency room in 2001 due to injuries associates with nursery products. From 1997 through 1999, an average of 65 children per year died from these injuries. As a result of two deaths to children in Washington state in portable cribs in 2001, the Washington State Legislature passed a bill to create a statewide public education campaign to raise awareness about recalled infant and toddler products. The campaign launched in December 2001 and runs through June 2005. The primary target audience for the campaign is parents and guardians with children under age 5.

Methods: Conduct baseline research, define target audience and key objectives, use parent focus groups to determine key messages and mediums, engage community partners, agencies and organizations to disseminate materials (Child Profile, SAFE KIDS, childcare providers, public health, Healthy Mothers, Healthy Babies, Head Start programs), Leverage resources by developing media partnerships (TV PSA), use "earned media" to get your message out, set up evaluation methods as part of campaign plan, know what you are going to track and evaluate, conduct benchmark research – refine campaign as necessary, develop sustainable campaign elements to continue after funding ends, keep your key stakeholders informed.

Results: Increased parental awareness of CPSC resources, increased use of CPSC resources, increased number of thrift & consignment stores screening for recalled products.

Conclusions: Increased knowledge of the availability of CPSC resources resulted in a behavior change, i.e., use of these resources. Over the past two years, use of CPSC resources has doubled in Washington state. Healthcare and childcare providers are strong influencers of parents with young children relative the product recall issue. 86% of parents reported they are motivated to check for recalled products if someone they trust, like a doctor or childcare provider, encourages them to do so. The Internet and TV are perceived as the "most convenient" ways for parents with children under age 5 to learn about recalled products. The campaign focuses on promoting the CPSC web site, e-mail service, and a TV PSA to increase awareness and encourage parents to check for recalled products. Thrift and consignment store managers and owners are receptive to learning how to screen for and remove or repair recalled products from their stores.

Learning Objectives: Learn how to leverage resources to conduct a successful public education and awareness campaign; Learn how to check for a recalled product; Learn methods for evaluating a public education and awareness campaign.

Congruence Between Maternal Report and Medical Record Abstraction of Childhood Injuries

Kimberly Sidora-Arcoleo, MPH (Pres), R Cole, PhD, H Kitzman, PhD, E Anson, BA

University of Rochester School of Nursing, Rochester, NY

Background/Objective: Assessing prevalence of injuries can be costly and labor intensive. Medical records have long been considered the gold standard for counting injuries. Due to cost constraints and privacy regulations, it's not always possible to conduct medical record abstractions. In addition, they may be incomplete due to misfiling or use of alternative source of care. It's important to determine whether parents accurately recall medically-attended injuries to their children and whether biases exist by relying solely on self-reported data.

Methods: Medical record abstractions for injuries which occurred from birth-4 years completed on 239 of 278 sociodemographically and ethnically diverse children from a larger injury study. Mothers reported on medically-attended injuries from birth-age 3 and then 1 year later, from ages 3-4.

Results: Over the 1-year recall period mothers' congruence with medical records was 90.9% for 3-4 years and 82.4% for 2-3 years. For the longer recall period of 0-2 years, congruence was 78.5%. Rates of under- versus over-reporting were virtually identical from 2-3 and 3-4 years. Under-reporting doubled when the recall period exceeded 2 years. Difference scores between medical records and maternal reports were calculated. Mean difference scores were quite low (-.008 to 0.15) indicating that the mothers were highly accurate in their report of injuries. There was no difference by maternal race, education, parity, or poverty.

Conclusions: Maternal report of childhood injuries can serve as a highly valid indicator of the true incidence of injuries when it's not feasible to abstract medical records. Accuracy was extremely high over a 1-year recall period. Medical record and mothers' reports were equally likely to be incomplete over a 2-year interval. Maternal report of injuries is a valid, cost-efficient alternative to medical record abstraction.

Learning Objectives: Describe the validity of maternal report of injuries. Identify biases in maternal reporting that exist due to sociodemographic or ethnic characteristics. Outline the methodology for eliciting valid and reliable injury data from face-to-face and telephone interviews.

Early Childhood Intervention to Prevent Violence: Implementation of the I Can Problem Solve Curriculum

Michelle A Scheidt, MA[1] (Pres), PA Schewe, PhD[2]

[1]Metropolitan Family Services, Chicago, IL
[2]University of Illinois at Chicago, Chicago, IL

Background/Objectives: South Chicago is a low-income, ethnically diverse community with high rates of interpersonal violence. Metropolitan Family Services implemented the I Can Problem Solve curriculum at five educational institutions in the

community from 2000 through 2004. In 2003-04, 333 Head Start and early elementary students, 82 teachers, and 39 parents participated in the intervention.

Methods: Staff trained teachers and parents to use the curriculum in the classroom and at home. Teachers and parents implemented the intervention, including classroom lessons and a dialogue process to use with children in settings of interpersonal conflict. Students, teachers and parents completed pre/post tests to identify changes in attitudes and behaviors related to conflict and problem solving.

Results: Pre/post testing of students indicates that in classrooms where the curriculum was fully implemented, significant improvements in student behavior were observed for 8 of the 11 behaviors assessed, including over-compliance, shyness, relationships with peers, engagement in learning, ability to wait, and language skills. Pre/post testing of teachers and parents showed significant increases in their belief in the benefits of teaching problem solving and in the ability of children to successfully use problem-solving skills.

Conclusions: The curriculum was shown to be most effective when teachers used the dialogue process frequently in the classroom. Subsequent intervention will focus on supporting teachers in regular, ongoing use of the dialogue process in order to achieve strongest outcomes. Replication in other settings should include incentives and supports for teachers to implement the lessons daily and use the dialoging process often in everyday classroom situations. Additional research needs to be conducted on the long-term impact of the intervention.

Learning Objectives: Understand Metropolitan Family Services' implementation and evaluation of the I Can Problem Solve curriculum with children, teachers, and parents. Describe significant outcomes related to attitude and behavior changes. Identify ways to effectively replicate the intervention in another setting.

Nonfatal Injuries Among U.S. Children With Disabling Conditions

Huiyun Xiang, MD, PhD[1] (Pres), L Stallones, MPH, PhD[2], G Chen, MD, PhD[1], SG Hostetler, BA[1], K Kelleher, MD[1]

[1]Center for Injury Research and Policy, Columbus, OH
[2]Colorado Injury Control Research Center, Department of Psychology, Colorado State University, Fort Collins, CO

Background/Objectives: We investigated nonfatal injury risk in U.S. children with disability. Disability was defined as a long-term reduction in ability to conduct social role activities, such as school or play, because of a chronic physical or mental condition.

Methods: From 57,909 children 5-17 years old who participated in 2000-2002 National Health Interview Survey (NHIS), we identified 312 children with vision/hearing disabilities, 711 with mental retardation, 603 with attention deficit hyperactivity disorder (ADHD/ADD), and 403 with chronic asthma. We compared nonfatal injuries in the past 3 months between children with disabling conditions and those without using injury rates and logistic regression analyses.
Results: Compared with children without disability, higher percentage of children with disabilities reported nonfatal injuries (4.2% for vision disability, 3.2% for mental retardation, 4.5% for ADHD/ADD, 5.7% for asthma vs. 2.5% for healthy children). After controlling for confounding effects of sociodemographic variables, children with disabilities, with the exception of mental retardation, had a statistically significantly higher injury risk than those without disabling conditions.

Conclusions: A higher nonfatal injury risk was observed among U.S. children with disabling conditions.

Learning Objectives: Learn new knowledge about nonfatal injury risk among children with disabling conditions. Identify type of disabling conditions and nonfatal injury risk.

Nurses for Newborns of Tennessee: Building a Community-Academic Partnership

Patricia Temple, MD[1] (Pres), M Lutenbacher, PhD[1], B Cooper[2], S Rohrbach, RN[3], T Woodard, MFT[3]

[1]Vanderbilt University, Nashville, TN; [2]Nurses for Newborns, St. Louis, MO; [3]1Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: Tennessee has over 10,000 abused and neglected children reported annually. It ranks poorly in low birthweight infants, infant mortality and teen birth rates. In 2001 Tennessee Titan, Fred Miller and wife Kim provided funds to launch Nurses for Newborns to improve infant outcomes through home visitation. Vanderbilt Department of Pediatrics and School of Nursing provided support to form a community-academic partnership.

Objectives: This presentation will 1) describe the development of a research infrastructure in a pre-existing home visitation program designed to improve maternal and child health and 2) present outcome data for over 700 families served during 2003.

Methods: 742 mothers received nurse home visits in Tennessee during fiscal year 2003. Multiple data points collected at each visit including environmental, psychosocial, and health measures were analyzed.

Results: Almost 60% of the mothers received 6 or more visits. Almost 1/3 of the mothers were pregnant and at least 1/3 of the infants had a chronic medical condition. Maternal mean age was 26.2 with 27% under the age of 20 years. Roughly equal numbers of women were either Black (47%) or Caucasian (42%); approximately 50% had at least a high school education or equivalency, and most received public assistance. Compared with the general population, outcomes indicate fewer injuries, higher rates of immunizations (95%), presence of a medical home (100%), and delay of a subsequent pregnancy (> 18 months – 96%).

Conclusion: Community-academic partnerships such as the Nurses for Newborns program can strengthen evidence-based practices for injury prevention and yield replicable models for communities.

Learning Objectives: Identify the impact of child maltreatment in Tennessee. Describe the Nurses for Newborns of Tennessee home visiting program. Describe the development of a research infrastructure in a pre-existing home visitation program designed to improve maternal and child health.

Injury and Violence Among Children

Tuesday 1:45 - 3:15 PM

Adult and Community Responsibility and the Prevention of Perpetration of Child Sexual Abuse: An Overview of the Collaborative Efforts to Prevent Child Abuse Program

Reshma Mahendra, MPH (Pres), R Wright, MA

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: In 1999, over 88,000 substantiated or indicated cases of child sexual abuse were identified by the Administration on Children, Youth and Families. Child sexual abuse involves any sexual activity with a child where consent is not or cannot be given. Child sexual abuse is associated with negative outcomes both in childhood (e.g., anxiety, depression, self-harming behavior, Post Traumatic Stress Disorder (PTSD), verbal and physical aggression, poor academic achievement, and low self-esteem) as well as in adulthood (e.g., anxiety, depression, self-harming behavior, substance abuse, PTSD, and high-risk sexual behavior).

The Collaborative Efforts to Prevent Child Sexual Abuse (Collaborative CSA) Program was developed to promote a more comprehensive approach to the prevention of child sexual abuse that focuses on two core concepts: adult and community responsibility and the prevention of perpetration.

Methods: In 2002, the Centers for Disease Control and Prevention (CDC) funded three state-level organizations (Prevent Child Abuse Georgia, Project Pathfinder of Minnesota, and Massachusetts Citizens for Children) to carry out the Collaborative CSA program. Each site is required to conduct a statewide inventory of child sexual abuse prevention programs, identify and engage stakeholders, select a prevention program to be piloted, implement and evaluate the selected program, and promote the core concepts. An additional aspect of this program is the emphasis on organizational level change to prevent child sexual abuse.

Results/Conclusions: This presentation will provide an overview of the core concepts and rationale for this program, including prevention at the individual, community, organization, and societal levels. This presentation will also describe how the public health approach guides the planning and implementation of this program.

Learning Objectives:

1. Describe the use of the public health model in the planning and implementation of a comprehensive approach to child sexual abuse prevention
2. Define adult and community responsibility and perpetration prevention
3. List potential child sexual abuse prevention activities

A Public Health Approach to Building Permanent, Grassroots Collaboratives to Prevent Child Sexual Abuse

Sally Thigpen[1], Reshma Mahendra, MPH (Pres)[2]

Stop It Now! Atlanta, GA, [2]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Description: Prevent Child Abuse Georgia (PCA Georgia) submitted a grant proposal to the CDC in the summer of 2002. On October 1, 2002, Georgia was selected by the federal Centers for Disease Control and Prevention, National

Center for Injury Prevention and Control, as one of three states to pilot and evaluate promising models for the prevention of child sexual abuse with a focus on adult and community responsibility. In consultation with our state level advisory council, PCA Georgia chose to pilot Stop It Now! Georgia in our state.

With the implementation of Stop It Now! Georgia, PCA Georgia, together with communities throughout the state, is challenged to implement strategies aimed at shifting the burden of prevention and protection away from children to the adults and communities who are responsible for their safety. Adults are the ones capable of preventing the perpetration of child sexual abuse and must be encouraged to address child sexual abuse before it happens.

To be successful, Stop It Now! Georgia will:

1. Raise awareness of adult and community responsibility for child sexual abuse prevention
2. Educate adults and communities about behavioral warning signs of potential perpetrators
3. Build skills and resources to respond appropriately when such signs are identified
4. Give parents and communities tools to address the conditions that allow child sexual abuse to occur

During this workshop, the presenter will share lessons learned during the three-year pilot of this prevention model in three Georgia communities and how these lessons are being applied to statewide implementation and creation of best practices

Maternal Approaches to Injury Risk Management

Craig L Anderson, PhD, MPH[1] (Pres), PF Agran, MD, MPH[1], KA Babb, PhD[2], DG Winn, RN, MPH[1]

[1]University of California-Irvine, Orange, CA; [2]University of Windsor, Windsor, Ontario, Canada

Background/Objectives: Environmental approaches and supervision are the most effective strategies for the prevention of injury to toddlers. As part of a cohort study of injury risk management, we developed three scenarios to measure the degree to which mothers would selection environmental measures, supervision, teaching, and other measures to manage risk. We examined the responses of 181 mothers of children age 27 to 30 months to three injury scenarios: an inhaler left out, a swimming pool, and outdoor play.

Methods: Mothers were asked to assign relative importance to the potential strategies offered. The sum of barriers and supervision scores measured the selection of effective strategies. Adaptation to different environments was measured by the difference between barrier and supervision scores.

Results: For the inhaler scenario, selection of effective measures was positively related to maternal age and education and negatively related to parental expectations and Spanish language. For the pool scenario the selection of effective measures was positively related to the perceived seriousness of injuries and to maternal education. In the outdoor play scenario, the selection of effective measures was positively related to maternal age, education, and knowledge of development and negatively related to parental expectations. Adaptation was positively related to maternal age and negatively related to parent expectations and feelings of incompetence.

Conclusions: Maternal education and age were most consistently related to appropriate selection of injury prevention strategies. For some outcomes maternal knowledge of development was positively related and parent expectations were negatively related to appropriate strategies. Perceived seriousness of injuries was related to appropriate strategies in only one scenario. Education of parents about child development has potential for injury control.

Learning Objectives: List two effective strategies for preventing injury to toddlers. Identify at least three factors influencing mothers' selection of effective injury prevention for toddlers. Describe factors influencing mothers' selection of appropriate injury prevention strategies in various injury risk situations.

Putting the Children to Bed . . . Sleep-Related Deaths Among Infants in Oklahoma

Pam J Archer, MPH[1] (Pres), MR Douglas, MPH[1], JJ Gofton, MD[2]

[1]Oklahoma State Department of Health, Oklahoma City, OK
[2]Office of the Chief Medical Examiner, Oklahoma City, OK

Background/Objectives: The Chief Medical Examiner in Oklahoma noted a possible increase in the number of infant deaths associated with co-sleeping (sharing a sleep surface with another) and suggested further study. Previous studies found certain factors to be associated with infant deaths during sleep, including infants not sleeping on their back, exposure to second-hand tobacco smoke, co-sleeping, sleeping on inappropriate surfaces (adult beds, couches, strollers, etc.), and use of soft bedding, pillows, and blankets. Factors associated with infant sleep-related deaths in Oklahoma were examined.

Methods: Possible cases were identified from the Medical Examiner (ME) database among infants less than one year of age who died in 2000-2003 using the following criteria: the

ME coded the case as 1) manner of death was accidental or unknown and the cause of death was asphyxia or 2) manner of death was unknown and the cause of death was "other" or unknown. The narrative for each possible case was reviewed to determine if the event occurred while the infant was asleep and, if so, the sleeping conditions at the time of injury.

Results: A total of 139 deaths were identified as possible cases. Narrative review found that two-thirds (95/139) of the deaths involved unsafe sleeping conditions. Two-thirds (63/95) of those deaths occurred while the infant was co-sleeping with an adult or child. The number of infant deaths occurring while co-sleeping increased each year.

Conclusions: Distinguishing between SIDS and co-sleeping deaths can be difficult and this relationship needs further exploration. Because safe-sleeping environments can protect against infant deaths from co-sleeping, SIDS, and mechanical and positional asphyxia, expanded educational messages on safe sleeping practices should be promoted through collaborative efforts.

Learning Objectives: Identify unsafe sleeping conditions. Describe factors that may contribute to co-sleeping or SIDS deaths among sleeping infants. Identify avenues to promote safe sleeping messages.

Risk of Childhood Injury Among Multiple and Singleton Births in Washington State

Bahman S Roudsari, MD, MPH (Pres), MA Kernic, PhD, MPH, BA Mueller, PhD

Harborview Injury Prevention and Research Center, University of Washington, Seattle, WA

Objective: Multiple births in the US have increased more than 65% since 1980. Multiples may be at increased risk of injury relative to singletons due to relatively more limited parental resources or supervision per child. We compared injury-related hospitalizations and deaths during the first 5 years of life among multiples and singletons.

Methods: We conducted a retrospective cohort study using linked birth certificate, hospital discharge and death certificate data from Washington State (1987-2002). All multiples (N=31380) and 3:1 ratio of randomly selected singletons (N=46125), frequency matched for year of birth, were included in the study. Injury-related hospitalizations and deaths were identified using International Classification of Disease, 9th Revision diagnosis codes. Cox proportional hazard regression was used to estimate the relative risk (RR) and 95% Confidence Intervals (CI) for injury-related hospitalization or death in the first 5 years of life for twins and triplets compared to singletons.

Results: The Relative Risk of injury hospitalization after adjustment for child's sex, mother's age, race, and marital status, number of older and younger siblings and median census tract household income was 1.4 (95% CI: 1.2-1.6) for twins and 2.9 (95% CI: 0.5-9.5) for triplets compared to singletons. The adjusted relative risk of injury-related death after adjustment for the previously mentioned variables was 0.9 (95% CI: 0.4-2.1) for twins and 8.2 (95% CI: 1.08-63.3) for triplets compared to singletons. Falls were the most common mechanism of injury for singletons and twins. Motor vehicle collisions were more common among singletons compared to twins.

Conclusion: Twins appear to be at an increased risk for childhood injury hospitalization, but not for injury death. This may be due to differences in levels of parental supervision among families with singleton and those with multiple deliveries.

Injury and Violence Among Youth

Monday 3:00 - 4:30 PM

A Public Health Initiative to Reduce Bullying in Middle Schools

Katherine W Bauer, MS[1,2] (Pres)

[1]Centers for Disease Control and Prevention, Epidemiology Program Office, Atlanta, GA; [2]Hennepin County Human Services and Public Health Department, Minneapolis, MN

Background/Objectives: Bullying is alarmingly prevalent in American schools. Being a victim and/or perpetrator of bullying is associated with a variety of negative physical and mental health outcomes. Since 2003, the Hennepin County Human Services and Public Health Department has supported implementation of the Olweus Bullying Prevention Program (OBBP) – a best practice in reducing bullying – in five suburban middle schools. Beginning in 2005, the department will expand the program to six additional schools.

Methods: Results of the Minnesota Student Survey show that school victimization is a key predictor of poor mental health among Hennepin County students. The OBBP was implemented to help reduce school victimization and improve

the mental health of students by influencing school policy and procedure. Schools were selected based on their need for violence prevention programming and an assessment of their ability to support and sustain the program. Quantitative baseline assessments of bullying were conducted prior to implementation, and follow-up will begin in spring 2005. Process evaluation data is collected on an ongoing basis via interviews and written reports.

Results: Baseline assessment revealed that 14% of students reported being frequently bullied, and 11% said they frequently bullied others. Girls more frequently reported being both a victim and perpetrator of bullying than boys. Qualitative data collection from year one determined that all of the schools successfully developed anti-bullying policies and have increased knowledge of bullying prevention among staff, teachers and parents. Eighty percent of the schools have begun educating students about bullying via classroom lessons.

Conclusions: Partnerships between local public health agencies and schools can lead to successful implementation of violence prevention programming. Through data-based decision making and the use of best-practice programs, public health can play a significant role in reducing bullying.

Learning Objectives: After this presentation, participants should be able to: define bullying, understand the physical and mental health implications of it, and have a sense of how frequently it occurs. Describe a comprehensive, school-based approach to bullying prevention. Recognize the important role that public health/school partnerships play in reducing bullying

Disparities in Gender-Based Violence Among Adolescent Girls: Immigration and Acculturation Influences

Michele R Decker, MPH (Pres), JG Silverman, PhD

Harvard School of Public Health, Boston, MA

Background/Objectives: There is a growing literature on immigration-based disparities in the burden of gender-based violence and related barriers to help-seeking among adult women. Much less is known about influences related to being an immigrant regarding gender-based violence among adolescents. The present study assessed associations between immigrant status and acculturation and adolescent girls' experiences of dating violence and sexual assault generally and among specific age and racial/ethnic groups using data drawn from a large, representative sample in Massachusetts.

Methods: The Massachusetts Youth Risk Behaviors Survey conducted in 1997, 1999, 2001, and 2003 produced representative samples of female students in grades 9 through 12 (n=7,970). Single survey items assessed experiences of dating violence, experiences of sexual assault, immigrant status, and acculturation (as approximated via dominant home language). Cross-sectional analyses were conducted to model the associations of immigrant status and acculturation level on each form of gender-based violence.

Results: Immigrant status was generally protective against dating violence victimization, however this protective effect was not found for sexually experienced girls, nor was it protective for younger girls. Immigrant status was also not consistently protective across racial/ethnic groups and in some groups increased risk. Acculturation was not a relevant factor for gender-based violence experiences in these analyses.

Conclusion: The impact of immigrant status on gender-based violence varies across groups based on age, race/ethnicity, sexual experiences, and by forms of violence. Further work is needed to clarify the sources of this variation in risk and protection across immigrant communities, and the relevance of these variations for help-seeking among and prevention programming for immigrant adolescents experiencing gender-based violence.

Learning Objectives: At the end of this session, participants will be able to: describe experiences of gender-based violence among adolescent girls based on immigration and acculturation experiences. Identify subpopulations of adolescent girls who are at increased risk for gender-based violence. Generate ideas for future research to clarify the associations between immigration and acculturation and gender-based violence for adolescent girls.

Infect Change: How Youth Brought CPTED Alive!

John Trinidad, Kara Andrade (Pres), G Doleman

EPIC, Berkeley, CA

Workshop Summary: Why do increased homicide rates occur in lower income areas that have more liquor stores? Environmental Prevention in Communities (EPIC) doesn't think it's an accident. So what do we do? EPIC in collaboration with the Alcohol Policy Network created a unique model that combines youth-driven policy change and youth/adult partnerships to apply Crime Prevention Through Environmental Design (CPTED) strategies on liquor stores that attract public nuisance and illegal activities. Be a city planner and help to create a liquor store that's not so ugly!

Who Are We? Environmental Prevention In Communities (EPIC) is a youth-driven alcohol environmental prevention and advocacy project of Community Recovery Services that trains and promotes the development of fifteen low-income youth ages 14-20 from Alameda County. The youth identify problems in their neighborhoods, create strategies and campaigns for change, and take action to reduce the risks of alcohol in their communities. EPIC's environmental prevention strategies focus on changing the environment in which children and youth encounter threats to their health and safety as a result of alcohol availability, and other harmful social norms. EPIC's developmental approach views youth as a community asset. EPIC staff works in partnership with youth to create sustainable change in the community. EPIC provides paid leadership opportunities for youth from every ethnic community to educate and engage other youth and adult allies in the process of youth-driven community mobilization.

The Problem: There are more than three and a half times as many retail alcohol outlets in Alameda County (2,907) as grocery stores that do not sell alcohol (790). There is one retail alcohol outlet for approximately every 145 youths under the age of 20. In Oakland alone there are 800 liquor licensees. Significant associations between the locations of alcohol outlets and rates of violent criminal events such as assaults are observed in cross-sectional geographic studies in the alcohol prevention and criminology literature. The ecological association between alcohol outlets and violence is not an accidental one.

In 2002-2003 years, there were 215 homicides in the city of Oakland, predominately in East and West Oakland. The rundown streets, large amounts of trash, and crowded storefronts create the appearance of a community often viewed as an eyesore by the rest of Alameda County.

The use of CPTED as a design management tool in the Fruitvale, Rockridge and Montclair areas would not only address creating a safer community, but it would also create a more aesthetically pleasing physical environment. Creating a safe and healthy environment is important in cultivating a sense of community for the residents of the neighborhoods, between residents and businesses, and for visitors to the neighborhoods.

What is CPTED? Crime Prevention Through Environmental Design (CPTED \sep-ted\) is a branch of situational crime prevention, which has as its basic premise that the physical environment can be changed or managed to produce behavioral effects that will reduce the incidence and fear of crime, thereby improving the quality of life, and enhancing profitability for business. The way we react to an environment is more often than not determined by the cues we are picking up from that environment; things which make normal or legitimate users of a space feel safe (such as good lighting), make abnormal or illegitimate users of the same space feel unsafe in pursuing undesirable behaviors (such as stealing from motor vehicles).

"The Broken Window" Theory of Neighborhood Revitalization: Fifteen years ago, criminologists identified the theory of "Broken Windows" which has served as the underlying foundation to the approach of reducing crime by creating community ownership and accountability. The term originated from the observation that when a broken window in a building is left un-repaired, soon all the windows are broken. Subsequently, there is a cause and effect reaction that accounts for neighborhood deterioration: minor crimes begin to occur and an atmosphere and perception of disorder ensues, such as public drunkenness, loitering panhandling blight, trash, abandoned cars, soliciting and other behavior. These petty crimes create immediate fear in a neighborhood or community and can create a certain perceived atmosphere of lawlessness that attracts even more crime. The illusion of disorder deteriorates a neighborhood, undermines commerce, creates fear in public spaces and undermines public support of the ability of government to solve problems; and it further alienates community members from each other. In an approach at community revitalization several communities have implemented "parts and pieces" of the "Broken Windows" approach by using such models as community policing, foot and bike patrols, ordinance courts, neighborhood watches, clean up projects and to deal with panhandling, truancy, homelessness and other issues. SiteChange! seeks to integrate the broken window approach and the implementation of CPTED recommendations in a more integrated approach to reducing crime.

What does CPTED Recommend? Originally three CPTED principles, Natural Surveillance, Natural Access Control and Territoriality were used as the basis for application strategies. In the past decade, the principles of Maintenance, Activity Support and Order Maintenance have been added to the original list. Below are brief definitions of the CPTED principles.

Natural Surveillance: The placement of physical features, activities and people in such a way as to maximize visibility. The lighting of public spaces and walkways at night. Other examples include the reduction of window signage to less than 15%, the placement of windows towards parking lots and interior shelving and displays being no higher than 5 feet.

Natural Access Control: The physical guidance of people coming and going from a space by the judicial placement of entrances, exits, fencing, landscaping and lighting.

Territoriality: The use of physical attributes that express ownership, such as fences, pavement treatments, art, signage, landscaping and building placement.

Maintenance: Allows for the continued use of a space for its intended purpose. Serves as an additional expression of ownership. Prevents reduction of visibility from landscaping overgrowth and obstructed or inoperative lighting.

Activity Support: Activity support involves placing natural activities in an area at appropriate times to increase surveillance and enhance access control.

Order Maintenance: Prompt identification of and attention to minor or non-criminal acts associated with disorderly behavior such as, prostitution, alcohol violations, weapon violations, juvenile violations, littering, vandalism, noise and even complaints about speeding cars and illegal parking. The City of Oakland adopted the CPTED concept and principles in December 14, 1999. It resolved to implement a pilot project in the Uptown Area to demonstrate the potential and effectiveness of this overall crime and grime fighting strategy.

About SiteChange! SiteChange! is a project that involves and engages youth in the process of assessment, education, enforcement and policy change to reduce the incidence of crime in Oakland by increasing visibility into liquor stores and retail establishments by facilitating the implementation of CPTED prevention strategies. Youth created linkages between community residents, who were not educated in CPTED strategies, store retailers, who will benefit from reduced crime and blight in their stores, and city officials who sought to make CPTED strategies more accessible to the community and its residents. The role of the youth was to serve as intermediaries, helping to facilitate a dialogue both through the education and implementation of CPTED recommendations. Once the survey had been completed and reviewed, EPIC youth worked with Oakland city officials and community organizations and developed a strategic plan to confront the issue of blighted liquor stores with the ultimate goal of creating a local ordinance that would increase visibility into alcohol outlet storefront windows. Because policy provides the fundamental underpinnings towards efforts to improve adolescent health, involving youth in meaningful roles in the development of policy is essential. Youth involvement results in more youth-friendly policies and promotes youth development by enabling youth to participate in meaningful decision-making.

Description of the workshop: The presentation is based on two EPIC PowerPoint presentations, “SiteChange!” and “Liquor Stores”. SiteChange! provides an overview of the policy strategy and the CPTED principles. The liquor stores presentation discusses the application of CPTED principles on real stores. The photo documentation of the blighted liquor stores generates a lively discussion amongst participants as they share their personal experiences.

Infect Change is unique because it incorporates youth development in the process of city planning and crime prevention. It’s the first time the Crime Prevention Through Environmental Design (CPTED) principles are being implemented by youth to address ongoing environmental problems related to the sale of alcohol and to affect policy change.

Learning Objectives:

1. How to form successful youth/adult partnerships in creating community-based change.
2. Understanding and implementing the CPTED guidelines.
3. Implementing a policy change campaign using environmental prevention strategies.

Tween Bullying: Raising National Awareness and Action

Ellen Schmidt, MS[1] (Pres), J Ott, PhD[2], S Limber, PhD[3] , and S Bryn, MPH[4]

[1]Children’s Safety Network, Education Development Center, Inc., Washington, DC; [2]Institute on Family and Neighborhood Life, Clemson University, Clemson, SC; [3]Clemson University, Clemson, SC; [4]Health Resources Services Administration Maternal and Child Health Bureau, Rockville, MD

Background: The number of tweens who indicate they have been involved in bullying is approximately 30% as bullies, victims or both. Bullies are four times more likely to have convictions than their peers. Lack of awareness and action prompted the development of a national campaign to raise awareness, prevent and reduce bullying behaviors, identify interventions, foster and enhance linkages between health, education and other partners to address the issue. One strategy was to utilize the vast networks and reach of partner organizations to maximize campaign reach.

Methods: Implementation Working Groups provided input into campaign strategies and materials; developed strategies to inform and mobilize their staff/constituents, and partnered to implement evidenced-based prevention programs and best practices. Information from 68 partnering organizations was collected prior to, during the Campaign’s 2-year development, and 6 months following the launch to gauge the partners’ interest, renewed commitments and describe what actions were taken.

Results: Prior to campaign launch, 79% of organizations reported some activity related to bullying awareness and prevention. Within the first six months of the campaign, partners anticipated significantly higher levels of information dissemination and awareness raising about bullying. There was a significant increase in the level of priority given to the issue prior to and after involvement in the campaign.

Conclusions: Reactions of the partners from the first round of structured discussions were encouraging – both in terms of partners' pre-campaign interest in bullying prevention and their commitment to spreading information about bullying prevention among constituents after the campaign's launch. We will report on new information being gathered and reflect lessons learned from this process.

Learning Objectives: Describe process used to garner support and action from national associations and nonprofit organizations to promote bullying prevention. Identify methods used by national organizations to influence their memberships. Describe lessons learned for future national campaign initiatives to promote injury and violence prevention.

Typologies of Adolescent Violence: Violence Perpetration and Victimization Within Dating and Same-Sex Peer Relationships

Robert M Bossarte, PhD (Pres), TR Simon, PhD, MH Swahn, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: Violence, whether directed towards oneself, peers, or dating partners, contributes disproportionately to the burden of injuries among adolescents. To address multiple types of violence, this study identifies behavioral typologies that can be used to develop prevention strategies for co-occurring behaviors and related victimization.

Methods: We obtained data from a 2004 school-based survey of all students enrolled in grades 7, 9 & 11/12 in a high risk community school district (n = 4,131; response rate = 81%). The current analyses include only those adolescents who perpetrated at least one act of violence and reported dating in the past year (n = 1,653). Cluster analysis was used to determine forms of violent behaviors with similar patterns of incidence. These clusters were used to examine dating and peer victimization, sexual violence, and suicidality across typologies.

Results: Among those who reported committing at least one type of violence, 67% (n = 1,185) reported committing more than one type of violence. Of those who committed more than one type of violence, 47% (n = 834) reported committing both peer and dating violence. Cluster analyses identified five typologies of violence among adolescents. The majority of adolescents (72%) were assigned to three low violence or context-specific clusters. Two high violence, mixed-context clusters were also identified. Members of the two high violence clusters reported substantially higher levels of dating and peer victimization, sexual violence perpetration and victimization, and suicidality than members of the other three clusters.

Conclusions: Typologies of violence can be used to identify specific behaviors that co-occur within a given subpopulation. These typologies suggest that prevention programs developed for high violence adolescents should also address sexual violence and suicide prevention.

Learning Objectives: Identify the characteristics of violence perpetration and victimization within the described typology. Describe the relationship between each typology and sexual violence and suicidal behaviors. Recognize the importance of understanding the co-occurrence of violent behaviors for the development and implementation of violence prevention programs.

Youth Violence Prevention Through Community-Level Change: YES!

Jennifer M Wyatt, PhD[1] (Pres), M Zimmerman, PhD[2], P Hutchison[2], S Morrel-Samuels, MPH[3], T Reischl, PhD[3], K Cephas, MPH[1]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]University of Michigan, Ann Arbor, MI; [3]Flint Youth Violence Prevention Center, Flint, MI

Background: While much research on youth violence prevention has been conducted on interventions with individuals and families, fewer programs have intervened at the community level. In September 2004, the Centers for Disease Control and Prevention awarded a cooperative agreement (Youth Violence Prevention through Community-Level Change) to the University of Michigan School of Public Health to assess whether interventions designed to change community structures and social processes could reduce rates of youth violence in communities. The proposed intervention, Youth Empowerment Solutions for Peaceful Communities (YES), is an interdisciplinary community change project developed by The Flint Youth Violence Prevention Center academic-community partnership. The goals of the project are to provide youth with opportunities to improve their communities, to enhance neighborhood organizations' ability to engage youth in their activities, and to change the social and physical environment to reduce and prevent youth violence. The empowered youth will join with neighborhood groups, who have been trained to work with them, to develop and implement community improvement projects such as community gardening and parks development. The evaluation includes a quasi-experimental pre-test/post-test design using two middle-school attendance areas in Flint, MI. Analyses will assess change in youths' violent

attitudes and behaviors; neighborhood social cohesion and social capital; and community indicators of youth violence and violence-related injuries.

Learning Objectives: Distinguish between individual-level and community-level interventions for youth violence prevention. Describe the intervention (Youth Empowerment Solutions for Peaceful Communities). Describe the evaluation strategies being utilized to measure outcomes of the YES project.

Injury and Violence Among Youth

Monday 4:45 - 6:15 PM

Aggressive Behaviors in Middle School and Young Adults: Reports of Lifetime Intimate Partner Violence Victimization and Perpetration

Renee Wilson-Simmons, PhD (Pres), A Stueve PhD, L O'Donnell, EdD, A Myint-U, MEd, R Duran, MSW, G Agronick, PhD

Education Development Center, Inc., Newton, MA

Objectives: We examine the relationship between middle school aggressive behaviors and young adults' experiences as victims and perpetrators of intimate partner physical violence (IPPV).

Methods: For this longitudinal study, entitled Reach for Health, surveys were administered to 977 8th graders who were resurveyed as young adults (average age, 19 years), when lifetime IPPV was assessed. Logistic regressions of IPPV victimization and perpetration on 8th grade aggressive behavior were performed, controlling for socio-demographic characteristics, other 8th grade risk behaviors, and exposures to physical aggression in the childhood home.

Results: In this economically disadvantaged sample, both genders reported high levels of middle school aggression and subsequent IPPV. At 8th grade, 32% of girls and 42% of boys reported being in a recent physical fight, and 21% of girls and 36% of boys carried a knife, razor, or box cutter. By early adulthood (19 years), 35% of females and males reported they had been victims of IPPV; 35% of females and 22% of males reported perpetration. In controlled analyses, 8th grade aggression predicted victimization (AOR 1.24, $p<.05$) and perpetration (AOR 1.22, $p<.05$) among males. Among females, 8th grade aggression was associated with subsequent perpetration (AOR 1.30, $p<.01$), but not victimization.

Conclusion: We followed a large sample of urban youth from early adolescence, during which time males and females engaged in high levels of aggressive behaviors, through young adulthood, by which time sizeable proportions reported IPPV. Identifying a link between engaging in aggressive behaviors in young adolescence and being involved in IPPV during young adulthood presents an opportunity to intervene early to redirect the pathway to adult partnership violence. Findings underscore the importance of helping male and female adolescents learn non-violent strategies for resolving conflicts in cross-gender relationships.

Learning Objectives: At the conclusion of the presentation, participants will: recognize that both cross-sectional and longitudinal research provides an inconsistent picture of the relationship of early aggression to IPPV. Understand that both males and females who engage in high levels of aggressive behaviors in early adolescence may be at high risk for IPPV victimization and/or perpetration. Acknowledge the importance of prevention and early intervention programs for adolescents that address gender differences in patterns of risks that may lead to IPPV.

Prevalence and Risk-Protective Factors of Disaggregated Asian/Pacific Islander Youth Violence Victimization Data

Earl S Hishinuma, PhD (Pres)

University of Hawaii, Honolulu, HI

Abstract: The aggregation of youth violence victimization through the heterogeneous ethnic category of "Asian/Pacific Islanders" masks the health disparities in this area. This research project is the first large-scale study (N = 5,051) that investigated the prevalence of victims of violence for an ethnically diverse Asian/Pacific Islander adolescent sample. The rate for the adolescent respondents of "was a victim of violence (was physically harmed by someone)" within the past six months was 3.33%. Over twice that rate was found for family members (6.97%) and over three times the adolescent-respondent rate was obtained for close friends (10.75%). Only partial support was found for the hypothesis that Asian groups would have the lowest rates, and Polynesian, African American, Hispanic, and Native American Indian/Alaska

Native groups would have the highest rates. Higher rates were found for Caucasians (adolescent respondents, close friends) and the Portuguese (family members, close friends), suggesting a "minority" effect. Significant risk factors of youth victimization were: suicide attempts (> 10 times the risk), problems with substance use (> 8 times the risk), and being arrested (> 7 times the risk). The overall results indicated the need for integration of ethnicity and ethnocultural variables in effective prevention and intervention planning, implementation, and evaluation.

Learning Objectives:

1. At the conclusion of the session, the participant (learner) in this session will able to articulate the need to disaggregate specific ethnic groups within larger umbrella ethnic groups when examining victimization
2. At the conclusion of the session, the participant (learner) in this session will able to construct epidemiological victimization studies on youth violence within their communities
3. At the conclusion of the session, the participant (learner) in this session will able to identify interventions for the reduction of youth victimization

Trajectories of Violent Behaviors Among African American Youth: Peer and Intervention Effects

Michele Mouttapa, PhD[1] (Pres), R Jagers, PhD[2], B Flay, PhD[3]

[1]Morgan State University and Johns Hopkins University, Baltimore, MD
[2]Morgan State University, Baltimore, MD
[3]University of Illinois in Chicago, Chicago, IL

Background: Violence prevention programs have been implemented in schools and in the community to address concerns with youth violence in the United States. It is of great importance to determine the extent to which program effectiveness is moderated by the peer context, as previous research demonstrates that school friends tend to engage in similar levels of violence.

Methods: Data were obtained from a randomized control trial of two prevention programs, a classroom-only program and a school/community program, both designed to reduce the onset and growth of violence, unsafe sex, and substance use. Twelve low-income, primarily African American schools in the Metropolitan Chicago area were assigned to one of two prevention programs or the control condition. Survey questionnaires were administered before and after the intervention in the 5th grade, and annually during the 6th, 7th, and 8th grades.

Results: Preliminary analyses were conducted on the first two waves of data consisting of 1,153 students. Logistic regression analyses were performed to determine the effects of peer violent and anti-violent behaviors and interventions on physical fight injuries, weapon carrying, and weapons assault. Covariates included baseline levels of violence and gender.

Conclusion: (1) friends' violent behaviors, compared to anti-violent behaviors, are more strongly associated with subsequent violence, (2) the effects of friends' violence are not moderated by perceived friendship quality/closeness, and (3) intervention effects are not moderated by friends' violent and anti-violent behaviors. Such findings imply that youth are more prone to model violent as opposed to anti-violent behavior. However prevention efforts may effectively prevent violence among students exposed to violent and non-violent friends alike. Three-year longitudinal models predicting violent trajectories in this sample are then presented.

Youth Deaths Due to Underage Drinking and Other Illicit Drug Use in 1999-2001

Douglas L Hill, PhD (Pres), MA Sheppard, PhD, TR Miller, PhD

CSN EDARC, Calverton, MD

Background: Past studies have found that adolescent deaths due to underage drinking greatly exceeded adolescent deaths due to illicit drug use. In 1994, underage drinking killed an estimated 6,350 youth ages 12-20 and illicit drug use killed an estimated 980. The current study updated these estimates for 1999-2001.

Method: The new estimates were computed from published estimates of the percentage of deaths by diagnosis and cause that are attributable to alcohol and to other illicit drug use (Harwood, Fountain, & Livermore, 1998). We updated the ICD-9 codes used in the original estimates to the equivalent ICD-10 codes and assumed the attribution percentages for all ages applied to youth. We multiplied the attribution percentages by 1999-2001 youth fatality counts tabulated from US Vital Statistics data.

The estimates included deaths from highway crashes, other injuries, drug overdoses, alcohol poisoning, HIV infections, tuberculosis, and chronic effects of substance abuse. They excluded deaths of adults due to long-term health effects of substance abuse that began before age 21.

Results/Conclusion: In 1999-2001, underage drinking killed an estimated 5,504 youths ages 12-20 per year and other illicit drug use killed an estimated 942 youths per year. While the overall numbers of deaths due to both underage drinking and other illicit drug use have declined slightly since 1994, deaths due to underage drinking still causes over six times as many youth deaths than other illicit drug use.

Learning Objectives: Understand how youth deaths due to alcohol and other illicit drug use are estimated. Learn trends in deaths from underage drinking and other illicit drug use over time. Identify which form of youth substance abuse causes more deaths.

Injury in the Home

Tuesday 8:30 - 10:00 AM

Collaborative Public Health, Mental Health, and Law Enforcement Response to Reverse an Epidemic of Unintentional Overdoses From Prescription Drugs in North Carolina

Catherine (Kay) Sanford, MSPH (Pres)

Injury and Violence Prevention Branch, Division of Public Health, NC Department of Health and Human Services, Raleigh, NC

Background: In North Carolina, between 1997 and 2001, there were more poisoning deaths from unintentional drug overdoses than from all other types of poisonings combined. In those five years, deaths from unintentional drug overdoses tripled (228 vs 690). The mortality rate from street drugs decreased; the mortality rate from prescription drugs tripled. In 2002, 1,096 medical examiner records of unintentional drug overdoses that occurred between 1997 and 2001 were reviewed. Mean age at death was 39; most decedents were white males living in rural areas. The percent of fatal overdoses increased more in women (210%) than in men (66%). Most decedents (75%) had a history of drug misuse, alcohol abuse, chronic pain, or mental illness.

Methods: In 2002, a 25-member Task Force to Prevent Deaths from Unintentional Drug Overdoses was appointed to make recommendations to the Secretary of the NC department of Health and Human Services and the state's Attorney General.

Results: The Task Force recommended (1) creating an accountable state infrastructure to reduce drug overdoses; (2) enhancing poisoning surveillance; (3) supporting drug diversion investigation by law enforcement; (4) enacting legislation for a controlled substance system to curtail drug diversion; (5) mandating education for medical professionals on prescribing controlled substances and recognizing the symptoms of substance abuse and options for treatment; (6) disseminating education for the lay public on drug abuse; and (7) increasing funding and in-patient and out-patient substance abuse treatment.

Conclusion: In 2004, a memorandum of understanding was signed between the NC Departments of Justice and Health and Human Services to implement the recommendations. The focus for 2005 is enhanced surveillance and the enactment of legislation for a controlled substance reporting system.

Learning Objectives: Describe the epidemic of fatal drug overdoses in North Carolina; Apply the Haddon Matrix as a technique for developing recommendations to prevent deaths from unintentional drug overdoses among professionals from mental health, public health, law enforcement, clinical and forensic medicine, pharmacy, poison control, substance abuse services, and academia; Implement the steps in creating a coordinated public health approach to reversing an epidemic of deaths from prescription drugs that includes surveillance, risk factor identification, intervention/evaluation, and implementation.

Examination of the Historical Evolution of a Best Practices Approach to Window Falls Prevention That Has Failed Dissemination Efforts

Joyce C Pressley, PhD, MPH[1,2] (Pres), B Barlow, MD[1,2,3], L Quitel, MD[1,2,3]

[1]Injury Free Coalition for Kids, Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY; [2]Center for the Health of Urban Minorities, Columbia, NY; [3]The Department of Surgery, Harlem Hospital Center, Columbia University, Columbia, NY

Background: Falls from buildings, primarily through open windows, cause serious pediatric trauma in developed and developing urban societies. Our objective is to examine 1) injuries due to falls from buildings in areas with and without enforced window guard regulation and 2) an historical timeline of how epidemiologic and event data shaped the health policy landscape of window falls in New York City (NYC).

Methods: Pediatric hospital discharge data from 27 U.S. states (KID-HCUP) and the New York Statewide Planning and Research Cooperative System (SPARCS) were used to examine injury incidence due to falls from buildings/structures in areas with and without enforced regulations. The historical perspective is drawn from an ongoing 35 year review of public documents, press releases, newspaper articles, public health regulations and revisions, legal and criminal cases, public education campaigns, and personal interviews.

Results: Amid reports that children were "raining from buildings in New York City," the city debated and then implemented public health regulations aimed at prevention despite opposition of key public organizations and private businesses. Today, exposure to multifamily dwellings in NYC is four times the national average, but hospitalizations for unintentional falls from buildings are nearly half (1.49 vs. 2.81 per 100,000, $p<0.001$). In unregulated areas of NY State, residence in multifamily dwellings is one-sixth that of NYC, but hospitalizations due to this mechanism are double.

Conclusions: This program represents a "Best Practices Approach," but remains "one of a kind" as other urban sites have failed attempts to pass similar regulations. Examination of the supporting and opposing forces in the 35 year history of this indisputably effective, but poorly understood program history may hold lessons for others attempting similar efforts.

Learning Objectives: Identify key milestones in the evolution of a "Best Practices" approach to prevention of injuries due to window falls; lidentify key issues successfully overcome in the original program that are hypothesized obstacles to its dissemination; Discuss the balance/imbalance of critical promoting and opposing forces that influence the dissemination of window fall prevention efforts in urban societies.

Leading Causes of Unintentional Home Injury in High-Risk Age Groups

Carrie Casteel, MPH, PhD, Kara S McGee, MSPH (Pres), CW Runyan, MPH, PhD

University of North Carolina Injury Prevention Research Center, Chapel Hill, NC

Background/Objectives: Children and older adults have increased rates of unintentional home injury, compared with all other age groups. The purpose of this presentation is to describe fatal and nonfatal unintentional home injuries among these high-risk populations.

Methods: Data from the National Vital Statistics System, the National Health Interview Survey and the National Hospital Ambulatory Medical Care Survey-Emergency Department were used to calculate the prevalence and rates of home injury among children (<15) and older adults (≥65). Estimates of fatal and nonfatal unintentional home injury were calculated as the average annual number of home injuries per year of the national data source and the average annual rate of home injury per average U.S. population per year of the national data source.

Results: An average of 2,096 children die each year as a result of home injury. Fires and burns, choking/suffocation, and drowning are the leading cause of home injury death among children. Children experience an average of more than 3 million unintentional nonfatal home injuries in the home each year. Falls are the leading cause of nonfatal home injuries among all childhood age groups. Each year in the U.S., an average of more than 7,000 adults 65 and older die as a result of a home injury. Falls are the leading cause of home injury death, accounting for more than half of all home injury deaths in this age group. Older adults experience an average of 2.3 million nonfatal home injuries each year, with falls accounting for the majority of these injuries.

Conclusions: Children and older adults are the two most vulnerable groups for unintentional home injury. Falls are a significant problem among these high-risk age groups.

Learning Objectives: Understand a key risk factor for home injury; Describe the burden of fatal and nonfatal home injury among children and older adults in the US; Identify key areas to target prevention efforts to decrease home injury among children and older adults.

Prevalence of Home Safety Practices Among Households Where a Person With a Disability Resides

Kara S McGee, MSPH (Pres), CW Runyan, MPH, PhD, C Casteel, MPH, PhD

University of North Carolina Injury Prevention Research Center, Chapel Hill, NC

Background/Objectives: Research in the field of injury prevention and control has identified certain risk factors that influence rates of injury. The presence of a disability has been identified as a risk factor for unintentional injury, particularly among children. The purpose of this study was to examine patterns of safety practices among households where a disabled person is reported to reside.

Methods: A random-digit-dial survey was conducted to assess the prevalence of home hazards and injury prevention practices related to home safety, including fires, burns,

poisoning, and falls and to elicit information on whether a person(s) with a disability resided in the household. Descriptive statistics were generated to illustrate the distribution of household characteristics and safety practices in households with and without disabled person(s).

Results: Among households with a disabled person, only 10% had a low-maintenance smoke alarm and were less likely than homes without a disabled person to have stairs without handrails or banisters. Fire escape planning was less common among households with a disabled resident. Households with a disabled person were more likely to have handrails or grab bars in a bathroom, have mats or non-skid strips in a tub/shower, and to be aware of the temperature setting on the hot water heater. The prevalence of fall events was higher among households with a disabled resident versus households without a disabled resident.

Conclusions: The absence of key safety strategies such as low-maintenance smoke alarms and a fire escape plan among households with disabled residents is of concern. The results of this study provide information for the targeting of prevention efforts among households with disabled residents.

Learning Objectives: Understand a key risk factor for injury; Describe safety practices among households where a disabled person resides; Identify key areas to target prevention efforts to improve safety practices among households with disabled residents.

The Importance of Sleep and Routines of Daily Living in the Prediction of Unintentional Injuries of Preschool Children

Christina Koulouglioti, MS, PhD[1] (Pres), R Cole, PhD[1], H Kitzman, PhD[1], K Sidora-Arcoleo, MPH[1]

[1]University of Rochester, School of Nursing, Rochester, NY

Background/Objectives: To estimate the role of child's sleep disturbance and child's routines of daily living in the prediction of unintentional injuries.

To estimate the affect of maternal fatigue on child's sleep, routines, and injuries.

Methods: A descriptive prospective study of 278 mothers and their 3 year-old children. Participants were recruited from 4 pediatric practices in Rochester NY from September 2002 to November 2003 and stratified to adequately represent poor, non-poor and majority, minority families. The data collection included observational assessments of the child and the mother-child interaction and an interview with the mother. Pearson correlation coefficients, Poisson analysis, and multiple regression analyses were conducted.

Results: It was found that higher levels of child's sleep disturbance predicted injuries (estimate = 0.180, $p<0.01$). Children who did not acquire enough sleep had more injuries and children with fewer routines of daily living had higher levels of sleep disturbance (b = - 0.046, $p<0.001$). Additionally, maternal fatigue was a significant predictor of child's injuries, child's routines, and sleep disturbance. Children of mothers who reported high levels of fatigue sustained more injuries (estimate = 0.032, $p<0.05$), had high levels of sleep disturbance (b = 0.041, $p<0.01$), and low levels of routines (b = - 0.242, $p<0.01$).

Conclusion: Our results indicate that child's sleep is a key factor in the prediction of injuries and that the environment plays an important role in its acquisition. Child's sleep disturbance was related to injuries and sleep was affected by routines and maternal fatigue. An important implication for injury prevention is the design of practical and effective interventions with parents focusing on the structuring of routines and fostering the enforcement of sleep hours.

Learning Objectives: To discuss the role of child's sleep acquisition in the prevention of injuries. To identify the importance of routines of daily living in the acquisition of adequate sleep among children. To outline the possibilities for effective interventions with parents and children that can lead to injury prevention.

Injury in the Home

Tuesday 1:45 - 3:15 PM

Adequacy of Data for Assessing Injuries at Home

Carrie Casteel, MPH, PhD, Kara S McGee, MSPH (Pres), CW Runyan, MPH, PhD

University of North Carolina Injury Prevention Research Center, Chapel Hill, NC

Background/Objectives: The home is a location where many injuries occur and is a setting in which specific interventions need development. However, no one dataset is ideal for capturing the magnitude and scope of the problem.

Methods: In our research, we examined multiple data sources, discovering significant gaps in how injuries at home are classified and compiled. This paper will highlight the data issues in classifying "home," as well as the extent of missing data in capturing the location of injuries, and make suggestions for improving data and their application to understand home injuries.

Results: There is no single source from which to identify the prevalence of all fatal and nonfatal home injuries. An analysis of national datasets revealed that 33% of all unintentional injury deaths do not have a location recorded. In addition, the place of occurrence for injuries resulting in emergency department care is missing in 25% of the cases recorded in the National Hospital Ambulatory Medical Care Survey – Emergency Department. The national database of hospital discharges does not record place of occurrence at all, thus this dataset cannot be used for home safety research. The use of E-codes varies greatly from hospital to hospital and state to state and is not consistently captured in all datasets. Furthermore, there are definitional inconsistencies across data sources as to what is classified as a "home" and also questions as to what the appropriate denominators are for home injury rate calculations.

Conclusions: This paper will propose long-term strategies for improving the consistency of data to address home safety and shorter-term issues associated with the best use of existing data, given the imperfections identified.

Learning Objectives: Describe the national datasets that can be used to study home injuries; Identify gaps in the information available from national datasets; Describe some data systems improvements that will facilitate home safety research.

Home Safety Council's National Fire Safety Literacy Project

Meri-K Appy[1], Kara S McGee, MSPH[2] (Pres), P Adkins[1]

[1]Home Safety Council, Washington, DC
[2]UNC Injury Prevention Research Center, Chapel Hill, NC

Background/Objectives: Adults with low literacy are considered to be at high risk from fires as a result of several factors, including their inability to read and understand basic fire prevention and protection messages and to utilize essential fire safety devices. The Home Safety Council's (HSC) National Fire Safety Literacy Project (NFSLP) aims to address this risk.

Methods: Research conducted by the NFSLP found that most fire safety materials used by fire departments are written at the 6th-11th grade reading level – well beyond what 90 million adults in American can read. HSC, in collaboration with ProLiteracy Worldwide and Oklahoma State University's Fire Protection Publications, have developed and introduced original, easy-to-read fire safety instruction into existing adult literacy curricula.

Results: NFSLP developed technically accurate fire safety teaching aides that meet national literacy delivery standards. The highly illustrated, easy-to-read NFSLP materials include information on home fire safety skills and how to apply key fire protection measures in the home, such as installing and maintaining adequate smoke alarm protection and emergency escape preparedness. Seven urban and rural areas of the U.S. have been selected as locations to pilot test the NFSLP. Literacy providers and fire service members from the seven pilot teams were trained in 2004 to implement and evaluate the project's instructional approach and specialized materials. The results of the pilot test will be presented during this session.

Conclusions: The National Fire Safety Literacy Project is an unprecedented effort that targets a subset of high-fire-risk audiences – adults with low literacy skills. The results of the pilot phase of this project will be used to inform the national implementation of this important effort.

Learning Objectives: Understand why adult low literacy is a barrier to public safety, particularly fire safety; Describe the National Fire Safety Literacy Project; Understand the results of the National Fire Safety Literacy Project pilot project and how findings can be used to implement that program nationally.

Residential Fire Safety Programs in Kentucky: A Comparison of Two Intervention Models

Robert H McCool, MS (Pres), TD Haynes, RN, RJ Clatos, MS

Kentucky Injury Prevention and Research Center, Lexington, KY

Background/Objectives: Kentucky's rate of residential fire-related death consistently exceeds the national rate. With CDC funding, the Kentucky Injury Prevention and Research Center (KIPRC) conducted an intervention (the SAIFE program). Objectives were to provide fire safety education and install smoke alarms in homes without them. Two intervention models were used.

Methods: In one model, entire counties were selected annually by KIPRC staff. Staff then met with local officials and fire chiefs to gain support. Smoke alarms, educational materials and supplies were funded by the projects. Firefighters and volunteers installed alarms, provided education, and collected data. KIPRC provided training and support for projects but no payments to local personnel.

In the second (later) model, fire departments applied for funding. The intervention community was the service area of the department. Objectives, funded materials and participant roles remained the same, but departments also received payment for data collection.

Results: In county-wide projects, much staff time was spent gaining support from local officials. Outcomes strongly reflected the level of local support. Projects worked best in counties with multiple cooperating fire departments. Results in counties served by a single fire department varied; results in counties with multiple fire departments that did not cooperate were generally poor.

Application-based projects reduced the need to "sell" the program and insured that local support already existed. Payments for data collection dramatically increased collection speed and data quality, while reducing KIPRC staff time. Fire safety education increased, in comparison to the county-wide projects, though average project size was smaller and the total number of smoke alarms installed annually was less.

Conclusions: Data reveal differences between the models. Each has strengths and weaknesses that make it more or less appropriate for particular communities.

Learning Objectives: At the close of the session, participants will be able to: Compare and contrast county-focused and agency-focused residential fire safety programs; Describe the advantages and disadvantages of county-focused and agency-focused residential fire safety programs; Select the more appropriate model for an area, when given information about an area where a residential fire safety program is to be implemented.

The Epidemiology of Elderly Drowning in Los Angeles County

Lawrence D Chu, PhD, MPH[1] (Pres), JF Kraus, PhD, MPH[2]

[1]California State University Northridge, Northridge, CA; [2]Southern California Injury Prevention Research Center, Los Angeles, CA

Background: The United States elderly population has the highest rate of drowning among all age groups except children less than 5 years of age. Whereas children and young adults are more likely to drown in swimming pools, oceans, and other bodies of water, persons 65 years of age and older are commonly found in bathtubs. Reasons for this difference in drowning location include the effects of falls, medications, underlying comorbid conditions, and suicide in the elderly.

Methods: This study determined the incidence of drowning mortality among the elderly population of Los Angeles County over an 11-year period. Mortality data with drowning external cause of death codes were obtained from computerized death certificates and verified at the Los Angeles County Coroner's Office. Additional data on location, activities, and circumstances related to the incident were collected from coroner records and autopsy reports.

Results: There were 183 elderly drownings from 1991 to 2001 in Los Angeles County with a 44% decline in these drownings over the period. Most of the victims were male and white, but there were also a large number of Asian victims. Unintentional drownings accounted for the majority of deaths with victims found primarily in swimming pools, spas, and bathtubs.

Conclusions: Little is known about the risk factors for elderly drowning. Pool barriers have helped in the prevention of childhood drowning, but these passive interventions have been ineffective in preventing older adults from drowning. Public health professionals should target elderly populations and their caregivers with appropriate behavior prevention strategies to reduce drowning in this age group.

Learning Objectives: By the end of the session, participants should be able to: Identify groups at highest risk for elderly drowning; Determine the primary risk factors that lead to elderly drowning; Discuss strategies to prevent drowning among older age groups.

The Marriage of Disciplines: A Collaborative Approach to Improve Home Safety and Quality of Life Among Older Adults

Michelle A Liebig, MPH, RD[1] (Pres), GJ Johnson, MSW[1], VM Marsh, RN[1], CL Cabrera, OTR[2], CM Beumer[3]

[1]Broomfield Health and Human Services, Broomfield, CO; [2]Home First, Louisville, CO; [3]North Metro Fire District, Broomfield, CO

Background/Objectives: Unintentional falls among older adults 65 and above can cause loss of life, quality of life and independence. Broomfield's fall prevention programs' intent is to have adults 60 and above remain living independently in their home longer through a coordinated, integrated, and tailored approach.

Methods: The program provides multi-component interventions including fall risk assessment, group education, individual home modifications, and follow-up. The fall risk assessment reviews participant's general health status, nutritional status, physical activity/mobility, and home/environmental hazards. The outcome of the assessment drives which professional discipline to refer to. Disciplines include health education, occupational therapy, dietetics, nursing, and social work. Three months post assessment participants, are phoned to evaluate behavior change, knowledge, and ability to perform daily tasks more independently.

Results: A total of 86 participants have completed the fall risk assessment. In all, 3% had nutrition recommendations, 1% physical activity recommendations, 58% recommendations for home modifications, and 38% no recommendations across all areas. Preliminary data from the three month post-assessment shows 85% participants have not fallen, 49% made changes due to recommendations, and 62% being very knowledgeable of how to prevent falls. Participants who had home modifications installed, 90% reported changing their ability to perform daily tasks more independently.

Conclusion: A multi-component and multi-disciplined approach to fall prevention has shown value in all areas, some stronger then others. To implement this type of program securing consistent and adequate personnel is essential to promote growth and sustainability in varied links. Program marketing focusing on dangers in the home may prove to increase recruitment. Increasing participant's self-efficacy through modeling and hands-on demonstration would be beneficial after home modification has been installed and placed.

Learning Objectives: Identify and outline key collaborators and partnerships within the community to build and sustain a comprehensive fall prevention program for older adults; Describe what a multi-componet and multi-disciplined fall prevention program looks like; Identify at least one successful strategy for program recruitment among older adults.

Intimate Partner Violence

Monday 3:00 - 4:30 PM

A Model for a Statewide Approach to Improving Health Care's Response to Victims of Violence–The Connecticut Health Initiative for Identification & Prevention (CHIIP) Program

Katherine J Smith, MSW (Pres)

St. Francis Hospital and Medical Center, Hartford, CT

Background: The CHIIP Program developed a public health approach to domestic violence for other states to reproduce that is productive, time-efficient, cost effective, and supportive of existing resources and collaborations. This Program provides a formula for states, hospitals, and providers to improve their response to victims of violence. This comprehensive approach includes policy consultation services, resource development, and provider training.

Results: The CHIIP Program has developed materials and is implementing programs that will: Improve the knowledge base and sensitivity of a range of healthcare providers throughout the state, and their knowledge and use of local domestic violence organizations. Improve institutional polices regarding abuse identification and intervention in hospitals, including sustainable training policies. Increase the number of providers that regularly screen for abuse victimization and perpetration. Research the effects of this public health initiative and provide guidelines for other states to pursue similar initiatives.

Methods: Hospitals throughout the state are offered the CHIIP Program services: free training to eight departments, policy evaluation, educational resources, and technical assistance. Evaluations are ongoing regarding policy lapses and improvements, and the impact on training on the amount of knowledge gained and/or changes in attitude of providers.

Conclusions: Upon completion, the CHIIP Program will not only have trained a significant number of health care providers, but it will have changed the climate of health care institutions across the state in regards to the care of abused patients. This presentation provides guidelines for implementation, an evaluation of individual hospital and state-wide initiatives to improve the care of patients, and a brief review of resources and tools utilized.

Learning Objectives: Throughout this presentation, the participants will: Articulate the benefits of a statewide approach to hospitals implementing policies regarding screening for victims and perpetrators of DV. Demonstrate concrete steps they can implement to improve the states' approach to patients who are victims and perpetrators of violence. Articulate guidelines for hospitals to implement sustainable, cost-efficient policies that improve care to patients. Understand the multi-level evaluation of this program currently being implemented statewide in Connecticut.

The Epidemiology of Intimate Partner Violence in New York City

E Carolyn Olson, MPH (Pres), KH McVeigh, PhD, MPH, B Kerker, PhD, MPH, C Stayton, DrPH, MPH

New York City Department of Health and Mental Hygiene, New York, NY

Background/Objectives: Intimate partner violence (IPV), including physical and psychological violence, is an under-reported phenomenon with serious health consequences. This study describes IPV prevalence among men and women in NYC and examines sociodemographic and health risk correlates.

Methods: We conducted bivariate analyses with 2002 data and plan multivariate analyses with combined 2002 and 2004 data from the NYC Community Health Survey, a random-digit-dial telephone survey with approximately 10,000 non-institutionalized adults each year. Respondents reported if they were afraid for their safety or the safety of others because of an intimate partner in the past year.

Results: Preliminary findings from 2002 data indicate that almost 146,000 New Yorkers (2.5%) experienced IPV in the past year. No difference in prevalence existed between women (2.7%) and men (2.2%). In both groups, prevalence appeared higher among those divorced, widowed or separated; non-white; or earning less than $25,000 per year. Both male and female New Yorkers who reported IPV had higher rates of serious psychological distress. Women who reported IPV had lower rates of health insurance and higher rates of not receiving needed health care than women without IPV. These findings did not hold true for men. A significant difference in condom use between those with and without IPV was found among women (6.5% vs. 40.7%), but not among men (48.3% vs. 38.8%).

Conclusions: These findings suggest parity in IPV prevalence, but point to disparities in circumstances surrounding reported fear of an intimate partner among NYC men and women. Although socioeconomic correlates of IPV were similar for both genders, access to care and condom use differed. Further analyses will examine how population-based studies can offer opportunity or limit exploration of gender differences in IPV.

Learning Objectives: Participants will be able to: Describe the prevalence of Intimate Partner Violence (IPV) in men and women in New York City (NYC) and consider the benefits and limitations of using population-based data on IPV. Discuss the implications of the finding of similar rates of IPV in men and women. Identify health risk factors associated with IPV in men and in women.

Mental Health Symptoms and Intimate Partner Violence in Emergency Department Patients

Debra Houry, MD, MPH[1], Robin Schultz, MPH[1] (Pres), K Rhodes, MD, MS[2], A Kellermann, MD, MPH[1], N Kaslow, PhD[1]

[1]Emory University, Atlanta, GA; [2]University of Chicago, Chicago, IL

Background/Objectives: Intimate partner violence (IPV) victims often seek care in the emergency department (ED), whether for an injury from abuse or mental health symptoms. The objectives of this study were to assess whether suicidality, depressive symptoms, or PTSD were correlated with physical, sexual, or emotional IPV; and to determine if a computer kiosk could be used to screen in an ED.

Methods: All eligible female patients were approached in the ED waiting room during study time periods. Patients participated in the screening process via a computer kiosk. Questions regarding IPV, depressive symptoms, PTSD, suicidality, and substance use were asked using validated tools. Chi-square, Pearson correlation, odds ratios, and MANOVA tests were used to determine significant associations between groups.

Results: 534 female patients participated in the computer screening. 37% disclosed IPV. Overall, 23% experienced recent physical abuse, 10% recent sexual abuse, and 32% recent emotional abuse. Using MANOVA, physical abuse ($p<0.001$), emotional abuse ($p<0.001$), and sexual abuse ($p<0.001$) were each independently associated with depressive symptoms, suicidality, and PTSD. Mental health symptoms increased significantly with amount of abuse: depression (OR 2.4 for 1 type of abuse, OR 3.2 for 2 types of abuse, OR 5.3 for 3 types of abuse), suicidality (OR 3 for 1, OR 10.5 for 2, OR 21.6 for 3), and PTSD (OR 2.3 for 1, OR 3.7 for 2, OR 9.8 for 3). Conclusion: Emotional, sexual, and physical IPV was significantly associated with mental health symptoms. Each type of abuse was independently associated

with depression, sucidality, and PTSD. Experiencing more than one type of abuse was correlated with increased mental health symptoms. Finally, computer kiosks may be useful adjuncts in health care settings

Learning Objectives: To assess whether suicidality, depressive symptoms, or PTSD were correlated with physical, sexual, or emotional IPV. To determine if the amount of abuse was correlated with mental health symptoms. To determine if a computer kiosk could be used to screen for violence and mental health symptoms in an emergency department population.

Murder-Suicide and Intimate Partner Homicide Surveillance in Minnesota Using Multiple Data Sources

Debra R Hagel, BS[1], Maureen E Holmes, MPH[1] (Pres), AK Pitman, PA[2], SJ Seifert, MPH[1]

[1]Minnesota Department of Health, St. Paul, MN
[2]Fairview Northeast Medical Center, Minneapolis, MN

Background/Objectives: There is no national surveillance system for homicide. Death certificates alone are not adequate for surveillance of either MS or IPH as they rarely indicate the relationship between perpetrator and victim. These projects had two purposes: 1) to describe MS and IPH in Minnesota, and 2) to develop and test methods for ongoing surveillance of MS and IPH by comparing the ability of multiple data sources to find cases and provide variables.

Methods: Five data sources were reviewed to identify potential cases of MS and IPH: newspaper clippings, supplemental homicide reports, femicide report, medical examiner / coroner reports and death certificates. Information, if available, on each potential case was collected from all five sources, including whether or not it met the case definition.

Results: No single data source identified every case of MS or IPH. Death certificates were very poor for case finding, but contributed valuable information regarding the victim and circumstances. Two-thirds of MS cases were committed by a current or former intimate partner. MS appears to represent a subset of IPH with significant differences, most notably in method and weapon of homicide.

Conclusions: Utilizing multiple data sources identifies additional cases of both MS and IPH and provides validation of variables. Ongoing surveillance of IPH and MS should be feasible for many states and offer valuable information that can be used to develop prevention strategies.

Learning Objectives: Participants will be able to describe the phenomena of murder-suicide, the victims, the perpetrators and the circumstances. Participants will be able to describe the phenomena of intimate partner homicide, the victims, the perpetrators and the circumstances. Participants will understand the contributions and differences of data sets used for surveillance of murder-suicide and intimate partner homicide (femicide report, supplemental homicide reports, medical examiner/coroner's reports, newspaper clippings, and death certificates).

Population-Based Intimate Partner Violence Surveillance: Improving the Value and Validity of State and National Findings

Travis A Fritsch, MS[1] (Pres), SS Tarima, MS[1], GG Caldwell, MD[2]

[1]Kentucky Injury Prevention and Research Center, Lexington, KY
[2]University of Kentucky College of Public Health, Lexington, KY

Background/Objectives: Population-based surveillance in the United States generally find that one out of four (25.5%) women report lifetime IPV prevalence (Tjaden and Thoennes 2000). One of the earliest US population-based study's of spousal violence in a state (Kentucky) found that one out of five (21.0%) women reported lifetime physical violence by a spouse, although that early study used a very restricted IPV definition (Schulman 1979). Current IPV surveillance initiatives by the Centers for Disease Control and Prevention (CDC) strive to standardize and stabilize IPV surveillance nationally (Saltzman et al. 1999, rev. 2002).

Methodology: This presentation summarizes lessons learned throughout two years of a state's work to more accurately define and update state IPV baseline data using population-based surveillance through telephone interviews with 4,059 adult women; to compare the state and national definitions and findings i.e., prevalence levels, risk factors, and population projections (expected v. observed) using the CDC's IPV: Uniform Definitions and Recommended Data Elements (Saltzman et al. 1999) and the National Violence Against Women Survey (Tjaden and Thoennes 2000); and to compare these findings with the state's convenience samples of observed IPV cases. Surveillance with at-risk populations requires careful planning which will be addressed.

Results: Kentucky's IPV prevalence significantly exceeds national findings (36.6% v. 25.5%); additional IPV types, not currently included in the national IPV definition, were identified by 14.1% of women surveyed; an estimated additional

232,691 female IPV victims who would not have been appropriately identified. Seven out of ten of these women described multiple incidents over the past 12 months and serious health and mental health consequences, including suicidal ideation, consistent with findings related to the current national definition. Depending on the IPV definition, Kentucky is reaching approximately one out of five to ten IPV adult victims. These findings are also used to establish injury-related costs, evaluate the capability of current intervention and prevention practices to protect IPV victims; reduce the gap between reported expected/observed cases; and, reduce the prevalence of IPV.

Conclusions: These efforts clearly document the need for on-going, standardized IPV surveillance using both population-based and convenience data. Other forms of serious IPV should be considered for inclusion in the nationally recommended IPV surveillance definitions and data elements to better understand the complexity and consequences of IPV.

Learning Objectives: At the conclusion of the oral presentation, participants will be able: To describe the role and function of population-based intimate partner violence (IPV) surveillance for injury prevention and control. To identify five important steps to improve instrument design, protect human subjects, and produce useful information in keeping with CDC/NIPC guidelines. To list three important applications or approaches to improve data analysis and application.

Intimate Partner Violence

Monday 4:45 - 6:15 PM

"Isn't She a Little Young?" Primary Prevention of Statutory Rape in Virginia

Robert L Franklin, MS (Pres)

Virginia Department of Health, Richmond, VA

Background: There were 555 births to girls' age 14 and 15 in 2002 in Virginia, 68.4% would have been considered a felony, with no age information for 71% of the fathers. M. Males' book "School-age Pregnancy: Why Hasn't Prevention Worked?" states there is a greater likelihood that a man older than 23 years will impregnate a junior high girl than will a junior high boy. Prevention education to teens is needed and important, but focusing messages to adult men, raising public awareness and addressing social norms about adult men having sex with minors begins primary prevention of statutory rape.

Method and Results: To increase community awareness, particularly to adult men, a social marketing campaign, "Isn't she a little young? Sex with a minor, don't go there." was designed using outdoor billboards, 255,000 post cards, posters, coasters and napkins placed in 150 bars, restaurants and retail establishments. Following a press release, a story appeared on the front page of the Washington Post with interviews on CNN, CBS Evening News, NPR, and Voice of America. The campaign's website receives 2,000 to 3,000 hits monthly; eight months after the campaign began.

Conclusions: Media responses, the web hits and calls from professionals across the United States, make it clear people are interested in this topic. By focusing a message on those traditionally not involved in the education and prevention of statutory rape - men, a dialogue has begun with men gaining awareness about the issue. A lesson learned when addressing a topic dealing with sex and minors – be very prepared for success in awareness and many challenges.

Learning Objectives: Identify issues and dynamics of statutory rape. Describe role of public health in the prevention of statutory rape. Define primary/universal prevention with particular understanding of involving those not included in traditional prevention and education on the topic of statutory rape – men.

Effectiveness of a Pediatric Clinic-Based Domestic Violence Program

Ann N Partap, MD, Curt Bay, PhD (Pres), DV Coonrod, MD, K Ward-Hart, MA, K Mathieson, PhD, D Salter, MBA,

Maricopa Medical Center, Phoenix, AZ

Background/Objectives: Since 1998, the American Academy of Pediatrics has recommended screening for domestic violence (DV), however, little is known about designing an effective program. In 2001, a behavioral health agency funded an urban academic health system and advocacy agency to pilot a secondary violence prevention program, targeting low-income families served at the Women's and Children's Clinics. The program implements (1) chart trigger and documentation for residents to screen for DV at prenatal or well-child visits (2) on-site victim advocacy (3) monthly resident training. The objective of this study is to identify the program's impact on pediatrician screening behaviors and DV disclosures during well-child visits.

Methods: Chart review of all well-child visits from January 2003 through December 2004 with descriptive statistical analysis.

Results: Of 15,466 encounters, 36.4% of parents were screened (monthly range of 20.2% to 51.3%), with a disclosure rate of 1.8% (monthly range of .4% to 3.2%); 35% of charts had no documentation and at 28.6% of encounters, the physician marked "no screen" indicating a barrier to safe screening. No consistent association occurred between screening rates and disclosure rates. Lack of training did not correspond to fewer screenings with screening rates declining to 22% by last quarter.

Conclusions: Over two years, 102 families disclosed current DV because of the program. However, the program was insufficient in overcoming screening barriers with 63.6% of parents not screened. Given that 28.6% of encounters presenting barriers to screening and the probable low disclosure rate for this population, a change in screening methods needs to be considered. Physician screening practices diminished over time despite on-going trainings. These findings suggest the need for program changes to sufficiently impact patient care.

Learning Objectives: Participants will be able to: Describe the impact and limitations of a pediatric clinic-based domestic violence program in changing physician screening practices. Describe the impact and limitations of screening on parent disclosures. Identify potential program modifications needed in pediatric settings.

Prevalence and Ecologic Factors Related to Men's Perpetration of Child Abuse, Sexual Violence, and Intimate Partner Violence: Preliminary Findings From a Large Community-Based Study

Jay G Silverman, PhD (Pres), MR Decker, MPH

Harvard School of Public Health, Boston, MA

Background/Objectives: Prior research conducted with victims of interpersonal violence suggests high rates of co-occurrence of child abuse, sexual violence, and intimate partner violence perpetration among men. Little research has been conducted with perpetrators in non-treatment settings to assess risk and protective factors for violence perpetration. This report offers preliminary findings from a large community-based study of men to better describe co-occurrence and patterns of risk and protection regarding multiple forms of interpersonal violence.

Methods: Men ages 18-35 attending eight urban community health centers anonymously completed an automated computer-assisted survey instrument (ACASI). Participants self-reported their experiences of violence perpetration as well as peer influences, family structure and dynamics, relations with community institutions, and community levels of violence during childhood, adolescence and early adulthood. Individual-level factors were also collected. Preliminary results will be presented on data collected from approximately 400 men.

Results: Prevalence of perpetration of child abuse, sexual violence, and intimate partner violence will be discussed, as well as overlap among these forms of violence perpetration. Individual, family, peer, and community-level risk and protective factors for perpetration of each form of violence will be reported.

Conclusion: Results will be discussed and are expected to 1) contribute to our understanding of perpetration of multiple forms of violence, 2) stimulate further research into this area, and 3) inform prevention efforts among boys and men.

Learning Objectives: At the end of this session, participants will be able to: Describe prevalence of multiple forms of interpersonal violence perpetration among a community-based sample of men. Describe co-occurrence of forms of interpersonal violence perpetration among a community-based sample of men. Identify risk and protective factors within multiple levels of the socio-ecological framework that may influence men's perpetration of forms interpersonal violence.

Preventing and Responding to Violence Against Women: North Carolina Public Health Activities, Programs, and Resources

Ingrid E Bou-Saada, MA, MPH (Pres), EJ Givens, MSSW

Injury and Violence Prevention Branch, Division of Public Health, NC Department of Health and Human Services, Raleigh, NC

Background: According to North Carolina's Behavioral Risk Factor Survey (NCBRFS), 24% of adult women experience physical and/or sexual violence. NC local public health departments serve thousands of women annually and can identify and intervene with many victims. Public health needs to lead coordinated state efforts to address prevention of violence.

Methods: In 1994, the NC Division of Public Health organized a group that became the Public Health Alliance to Prevent Violence Against Women with representatives from state public health programs, medical organizations, universities, and domestic and sexual violence programs. The Alliance has coordinated numerous violence prevention and early intervention initiatives, including the following recent activities: 1) "Responding to Violence Against Women: A Guide for Local Health Departments" was published in 2004 to assist with the intervention and prevention of violence against women in clinics and communities; 2) regional workshops (219 attendees) were held to introduce local health department staff to the "Guide" and provide skill building and program development resources; 3) a videoconference in 2005 will further build violence identification and assessment skills; and 4) an extensive analysis report of NCBRFS violence questions will be published in February 2005 and included in a resource packet disseminated to health departments, domestic and sexual violence agencies and state coalitions, and the media.

Results: The capacity of state public health programs and local health departments to respond to violence in communities and in clinic populations is greatly enhanced. Formal Workshop evaluations and informal feedback are overwhelmingly positive.

Conclusions: A survey planned for 2005 will document changes in response behavior of local health department clinical practitioners. These activities have reinforced public health's role, credibility and leadership in violence prevention.

Learning Objectives: List three dissemination channels for reaching a public health audience to provide information and training regarding the prevention of violence against women. Describe three potential uses for state Behavioral Risk Factor Survey questions in program planning. Describe three ways that public health departments can play a leadership role in the prevention of violence against women.

Quantifying and Characterizing Emergency Department Visits by Women Victims of Intimate Partner Violence Identified From the Prosecutor's Database

Cathy Kothari, MA[1] (Pres), PK Smith, MS[2], and KV Rhodes, MD, MS[3]

[1]Borgess Research Institute, Borgess Medical Center, Kalamazoo, MI
[2]Michigan Department of Community Health, Lansing, MI
[3]Section of Emergency Medicine, University of Chicago, Chicago, IL

Background: The Michigan Department of Community Health was interested in identifying the overlap between emergency department (ED) visits and prosecution of Intimate Partner Violence (IPV). While 60% of the PA records documented injuries, a preliminary match with the prosecutor attorney (PA) IPV database found only a 6% overlap.

Objectives: We wanted to identify and characterize all ED visits by known IPV victims. We hypothesized that most victims had been seen in an ED but were not identified.

Methods: We reviewed the databases of all 8 EDs in Kalamazoo County, MI for a three-year period (1999-2001) for all women victims in the Y2000 prosecutor's IPV database.

Results: Of 961 women victims in the Y2000 prosecutor IPV database, 540/965 (56%) visited an ED in Y2000 and 796/965 (82%) visited an ED during Y1999-Y2001; many (41%) were seen in more than one ED. Among IPV victims seen in the ED, the average number of visits was 4.6 (range 1-72), for a total of 4449 ED visits, twice the number of an age-matched control group of women ED patients not listed in the PA IPV database. Nearly a third (29%) of visits by PA victims were for injury-related complaints, however, only 223 (.05%) of all ED visits included documented IPV. Documentation of mental health and/or substance abuse problems was common in both the ED (22%), and in the PA records; alcohol and drugs were documented as co-factors in almost 2/3rds of the IPV incidents which prompted prosecution.

Conclusion: The majority of women victims of prosecuted cases of IPV were seen in local EDs multiple times, representing many missed opportunities for identification and referral for IPV and co-occurring problems.

Learning Objectives: Report emergency department utilization by women victims in prosecuted cases of intimate partner violence (IPV): Incidence, frequency of visits, volume of visits. Describe the reasons for emergency department visits by this group, and the rate of IPV screening and identification

documented in the medical records. Compare emergency department utilization by IPV victims with utilization by women who are not victims in prosecuted cases of IPV.

Intimate Partner Violence

Tuesday 10:15 - 11:45 AM

Gender Differences in Risk Factors for Forced Sexual Intercourse Among NYC High School Students

Sandeep R Chaudhari, MS[1,2] (Pres), CD Stayton, DrPH[2]

[1]Columbia University Center for Youth Violence Prevention, New York, NY
[2]Bureau of Injury Epidemiology New York City Department of Health and Mental Hygiene, New York, NY

Background/Objectives: Historically, crime and survey data indicate that adolescent girls experience more forced sexual intercourse (FSI) than boys. Recent state and city Youth Risk Behavioral Survey (YRBS) findings suggest the problem is pronounced among boys, too. This research examines gender-specific correlates of fsi among nyc public high school students.

Methods: In 2003, 7,390 nyc high school students were administered the yrbs. Data from 3,240 sexually active students were analyzed. Associations between FSI and sociodemographic factors and between fsi and sexual risk behaviors (e.g., condom use, age at first intercourse, number of sexual partners) were tested. Exposure to dating violence was considered as a confounder. Analyses were run in sudaan. $\chi 2$ tests assessed significance of association in two-way tables; Cochran-Mantel-Haenzel $\chi 2$ tests were used for three-way tables. Gender-specific multiple logistic regression models were fitted.

Results: 8% of boys and 13% of girls reported FSI. The regression model for boys found that dating violence [or =5.86 (3.55, 9.67)], failure to use condoms [or= 2.33 (1.49, 3.63)], and high number of sexual partners [or= 3.10 (1.65, 5.81)] were positively associated with FSI. For girls, dating violence [or= 3.21 (2.14, 4.81)], younger age at first intercourse [or=2.45 (1.42, 4.24), and high number of sexual partners [or=2.45 (1.42, 4.24)] were positively associated with FSI. Adjusted odds ratios for sexual risk behaviors were larger for boys.

Conclusions: Forced sexual intercourse is prevalent among both nyc high school boys and girls. Sexual risk behaviors were associated with FSI for both genders. But, the specificity and strength of these associations differed by gender. Gender-specific research on the timing, type, and consequences of fsi can advance prevention efforts.

Learning Objectives: Identify risk factors for forced sexual intercourse in an urban high school sample. Describe the differences in risk factors for FSI between boys and girls in NYC high schools. Motivate participants to generate and test hypotheses about gender differences in FSI among youth in their own communities.

Healthcare Burden and Injuries Associated With Intimate Partner Violence Among Young Adults in the U.S.

Linda E Saltzman, PhD, Monica H Swahn, PhD (Pres), T Haileyesus, MS

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: We determined prevalence, demographic characteristics, and health-related correlates of injuries from physical intimate partner violence (IPV) perpetration and victimization and IPV sexual coercion to learn about the healthcare burden associated with IPV.

Methods: We conducted cross-sectional analyses of weighted survey data from 14,322 participants (ages 18-28) in the third wave of the National Longitudinal Study of Adolescent Health conducted in 2002. Participants include 11,738 young adults (6,318 females, 5,420 males) reporting one or more intimate partner relationships in the past year. Interviews were conducted using computer-assisted interviewing technology for sensitive questions to ensure safety of respondents. Twenty-eight percent of the participants were 18-20 years old, 49% were 21-23 years old, and 23% were 24-28 years old. A majority of participants (70%) were white, 15% were black, and 11% were Hispanics. Logistic regression analyses were used to predict a variety of health-related factors.

Results: Physical IPV victimization was reported by 8% of participants, perpetration by 8%, and an additional 18% of respondents reported both victimization and perpetration. IPV sexual coercion victimization was reported by 8% of participants, perpetration by 2%, and an additional 4% reported both victimization and perpetration. Ten percent of participants reported injuries to themselves or their partner due to IPV. Statistically significant adjusted odds ratios suggest that

young adults with IPV-related injuries are more likely to have additional negative health-related factors, contacts with health professionals, and contacts with the healthcare system.

Conclusions: IPV places a large burden on the healthcare system. Prevention strategies should address both victimization and perpetration of IPV, and may be able to reduce the burden on the system.

Learning Objectives: Describe the Longitudinal Study of Adolescent Health (Add Health). Describe what Add Health data show about victimization and perpetration of physical IPV and IPV sexual coercion, and about IPV-associated injury for young adults in the U.S. Describe the healthcare burden associated with IPV among young adults in the U.S.

Health of Women in Domestic Violence Shelters

Stacey B Plichta, ScD[1] (Pres), T Babineau, MD[2], E Vogel[1], Y Zhang, PhD[1]

[1]Old Dominion University, Norfolk, VA; [2]Department of Family and Community Medicine, Norfolk, VA

Background: This study examines the acute and chronic health care needs of women seeking refuge in a domestic violence shelter. The battered women's shelter movement in the U.S. began as a feminist grassroots effort in the 1970's and grew to over 1,800 places sheltering 200,000+ women per year. Abused women have worse physical and mental health status than other women but few studies have examined the health care needs of women in shelter.

Methods: 65 women sought medical care from a family medicine MD and residents who work in an urban shelter one day each month. Their medical records were abstracted with no identifiers and entered into an SPSS dataset. Women were predominately African-American (71%) with an average age of 35.2 years (80% are under 44). 60% were known to have children and 18% were pregnant or postpartum. This study was approved by the Medical School IRB.

Results: Women presented with many conditions, including injuries & pain (32%), mental health (19%), upper respiratory infections (19%), gynecological concerns (16%), hypertension (15%) and dermatological issues (8%). Half (51%)had one or more preexisting diseases including: hypertension (32%), asthma (22%), arthritis (19%), diabetes (9%) and seizure disorders (5%).

Conclusions: Shelters provide an invaluable resource to women who are harmed by interpersonal violence. However, due to a lack of resources, few can help women address their health concerns. These results clearly indicate a need for further work towards models that bring medical care to abused women in shelter.

Learning Objectives: Identify technical bases for selected improvements to building codes and safety standards related to evacuation and fall prevention. Estimate risks of stairway-related falls in tall building evacuations and generally. Describe specific environmental changes that improve safety through fall prevention and enhanced egress capability.

Intimate Partner Violence: Findings From Hospital Assault and Self-Inflicted Injury Records

Travis A Fritsch, MS[1] (Pres), SL Beaven, BS[1], AJ Huck, MPH[1], SS Tarima, MS[1], GG Caldwell, MD[2]

[1]Kentucky Injury Prevention and Research Center, Lexington, KY
[2]University of Kentucky College of Public Health, Lexington, KY

Background/Objectives: The CDC is striving to standardize and stabilize IPV surveillance nationally (Saltzman et al. 1999, rev. 2002). The Kentucky IPV Surveillance Project is one of several funded projects across the United States working collaboratively to examine the most effective strategies to develop and report IPV surveillance using population-based and convenience samples to more accurately describe IPV, the related burden of injury, risk and protective factors. The focus of this presentation is to describe the lessons learned using hospital electronic databases and medical records to identify and describe the prevalence of IPV.

Methodology: More than 1,553 medical records identified by assault or SI E-codes through the electronic databases of thirteen regional Kentucky hospitals were reviewed to determine the presence of IPV. According to the E967.3 code for IPV, only an estimated 17% of assaults were IPV-related; record abstraction found more than 35% were IPV-related. Factors were examined to determine where problems existed for identification and appropriate coding for IPV. For example, the electronic databases, used in isolation for IPV or injury surveillance, would have identified a larger percentage of adult women assaulted by their fathers or E967.0. Abstraction showed the majority of these to be IPV. However, hospital personnel who identify or enter only the first three digits of the E967 E-code, are either routinely entering or allowing the software program to default code the incorrect fourth integer. IPV surveillance using just the assault and IPV codes would have missed many IPV victims, identified through the SI records.

Results: Out of all the SI cases, an estimated 18.2% were IPV-related. The majority (97.1%) of IPV/SI cases were found in the hospital discharge data compared with 2.9% of emergency department SI cases. IPV-related assaults were more likely to be found in the emergency department cases. IPV victims who were pregnant were not likely to be counted as their data were recorded separately as were IPV victims who sustained maxillofacial injuries and needed prompt dental treatment.

Conclusions: These efforts clearly document the need for on-going, standardized IPV and injury surveillance using multiple data sources. Strategies for improving predictive value positives for ICD-9-CM codes can be incorporated into existing hospital policies and practices to improve the completeness and accuracy of injury and IPV surveillance. Findings about risk and protective factors should be reported to improve screening and intervention practices that promote safety and well-being.

Learning Objectives: At the conclusion of the oral presentation, participants will be able: To describe strategies for conducting hospital intimate partner violence (IPV) surveillance using medical records E-coded for assaults and self-inflicted injuries (SI). To identify five actions to improve data collection and reporting consistent with HIPAA, CDC, and NIPC guidelines. To list three strategies for collaborating with hospital personnel to improve accurate identification, reporting and referring of IPV cases, including those where SI is indicated.

The Association Between Sexual Violence Victimization and Risky Health Behaviors: Findings From the 2003 National Youth Risk Behavior Survey (YRBS)

Kathleen C Basile, PhD[1], Michele Lynberg, PhD, MPH[1] (Pres), I Arias, PhD[1], N Brener, PhD[2], LE Saltzman, PhD[1], T Simon, PhD[1]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion

Background/Objectives: While sexual violence (SV) victimization is a major public health problem associated with several negative health behaviors, gaps remain in our understanding of the range of health behaviors associated with SV victimization and how these vary by gender, particularly within nationally representative samples. This paper uses national data to examine lifetime SV victimization's association with several important health behaviors.

Methods: The data source is the 2003 national YRBS, which obtained data through anonymous self-administered questionnaires given to a nationally representative sample of students in grades 9-12. Lifetime SV victimization was measured using a single item. Recent health behaviors were examined in four blocks: substance abuse behaviors, diet behaviors (e.g., vomiting), violent behaviors (e.g., fighting), and failure to engage in healthy behaviors (e.g., physical activity). Analyses were stratified by gender.

Results: 11% of female students and 5% of male students reported SV victimization. Female victims had increased odds of abusing alcohol and other drugs, while male victims had increased odds of abusing cocaine only and driving with someone who is drunk. There were similar patterns across gender for diet and violent behaviors; both female and male victims had increased odds of fasting, vomiting, taking diet pills, fighting, partner violence, and suicide attempts. Female victims were at increased odds for physical inactivity, while males had increased odds of not eating fruits and vegetables.

Conclusions: These findings document the broad scope of negative health risk behaviors associated with SV victimization, with a consistent pattern for males and females. Programs designed to enhance health promotion behaviors or reduce substance use, violence, and risky dieting behaviors may benefit from efforts to understand and address the needs of SV victims.

Learning Objectives: Describe the lifetime prevalence of sexual victimization of male and female youth based on 2003 National YRBS data. List several risky health behaviors associated with sexual victimization. Describe the gender differences in associations between sexual victimization and risky health behaviors.

Motor Vehicle Injury

Monday 3:00 - 4:30 PM

Day and Night Safety Belt Use in Connecticut

Richard P Compton, PhD[1] (Pres), N Chaudhary, PhD[2], L Geary, PhD[2], D Preusser, PhD[2]

[1]NHTSA, Washington, DC; [2] Preusser Research Group, Trumble, CN

Background/Objectives: While observed safety belt use has risen steadily over the years (to 80% in 2004), safety belt use in fatal crashes remains below 50%. One reason for this is that observational surveys of safety belt use are almost exclusively conducted during daytime hours and a majority of

fatalities occur during the night. Safety belt use for front seat outboard occupants in NHTSA's Fatality Analysis Reporting System (FARS) shows that in 2003 53% were observed using their safety belts during daytime crashes versus 34% during nighttime crashes. In this study, safety belt use was observed in Connecticut both during the daytime and at nighttime.

Methods: For comparison purposes statewide representative observational surveys of front seat outboard drivers and passengers were conducted both during day and night in Connecticut. Procedures for day and night observations were as nearly identical as possible. Observations were made both before and after Connecticut's May 2004 "Click It or Ticket" mobilization campaign to allow for an assessment of the effects of the mobilization on both day and night safety belt use rates. Night observations were conducted by the use of relatively sophisticated night vision equipment.

Results: Daytime safety belt use in Connecticut was 83.0% versus nighttime use of 76.6%, a 6.4% difference. Safety belt use was lower for both genders, by vehicle type (car, pick-up, SUV, and van), and for drivers and passengers. The greatest difference between day and night safety belt use was observed SUV occupants (almost 9%). Also, the difference between day and night safety belt use was much greater on urban roadways than rural roadways. Analysis of safety belt use rates pre and post the May 2004 "Click It or Ticket" mobilization showed that this daytime high visibility enforcement campaign had an impact on both day and night use rates.

Conclusions: There is a significant difference in observed day and night and in urban and rural safety belt use rates in Connecticut. There are also significant differences in safety belt use by fatally injured passengers during the daytime and at night. Thus, it would appear to be prudent to undertake efforts specifically to increase safety belt usage rates at night.

Learning Objectives: Describe the difference in daytime and nighttime safety belt use rates. Describe why raising nighttime safety belt use is important for reducing deaths and injuries. Understand how the May 2004 "Click It or Ticket" mobilization in Connecticut raised both day and night safety belt use rates.

Development of a Child Safety Seat Hassles Scale

Phyllis F Agran, MD, MPH, Craig L Anderson, PhD, MPH (Pres), DG Winn, RN, MPH

University of California-Irvine, Orange, CA

Background/Objectives: Several factors have been reported to influence Child Safety Seat (CSS) use. A CSS Hassles Scale was developed and evaluated to explore hassles associated with CSS non-use.

Methods: Focus groups with violators of the California child passenger safety law provided data to construct the 29-item scale. The scale was used in an interview conducted with 132 parents of children 12-47 months, weighing 20-40 pounds, cited for violation of the law. Each hassle was rated 0-3 on frequency and intensity. Parent report of CSS use was obtained. Factor analysis was used to construct subscales. Relationship of subscale frequency and intensity scores to reported CSS use was assessed with linear regression.

Results: The sample was 86% Latino, 45% Spanish-speaking, and 55% with income <$30,000. 31% reported that their child did not "always use" a CSS. Four subscales were identified: Child, Crowding/Inconvenience, Busy, and Vehicle. Only the frequency of the Child subscale items (e.g. resists, gets out of seat) and the frequency and intensity of the Crowding/Inconvenience subscale items (e.g. CSS takes up too much room and too many passengers) were related to CSS non-use (p<. 001). A 9-item scale (from these 2 subscales) predicted CSS use (r=. 43) better than did the sum of all 29 items.

Conclusions: In this low-income largely Latino population of violators, self-reported CSS non-use was related to hassles associated with child behaviors and crowding/inconvenience. The shorter 9-item CSS Hassles Scale is potentially useful as a tool to screen families for inconsistent CSS use and as a basis for parenting skills training and counseling. Further development of the instrument requires linkage to observed use.

Learning Objectives: Describe four CSS hassles subscales. Identify which hassles are related to CSS non-use. Identify two potential uses of this instrument.

Fatal Crashes Involving Young Unlicensed Drivers in the U.S., 1998-2002

Christian L Hanna, MPH[1] (Pres), D Taylor, PhD[2], M Sheppard, PhD[2], L Laflamme, PhD[3]

[1]Marshfield Medical Research Foundation, Marshfield, WI
[2]Pacific Institute for Research and Evaluation, Calverton, MD
[3]Karolinska Institutet, Stockholm, Sweden

Background/Objectives: A majority of traffic-related deaths of young people in the U.S. are licensed drivers or occupants of motor vehicles. Unlicensed drivers are an unrecognized group of road users. The objective of this descriptive study is to describe fatal crashes involving young unlicensed drivers under the age of 19 years.

Methods: Data was extracted from the crash, vehicle, and person files of the National Highway Traffic Safety Administration's Fatal Analysis Reporting System for 1998 to 2002. US Census Bureau data were used for regional and national denominators.

Results: Young unlicensed drivers were involved in 2452 fatal crashes, involving 3,315 motor vehicles and 8,177 people, and resulting in 2,995 fatalities. The young unlicensed driver was a fatal victim in 45% of the crashes. The majority (74.5%) of young unlicensed drivers were males and 51.5% were aged 17-18 years. Fatal crash rates of young unlicensed drivers in the southern states were 19% higher than other regions attributing 49.9% of all fatal crashes. Other driving practices contributing to fatal crashes included speed, lack of restraint use, and night driving.

Conclusions: Fatal crash involvement of young unlicensed drivers is a public health threat. Preliminary age, gender, regional, and driving patterns emerge to address young unlicensed drivers involved in fatal crashes. Additional studies are needed to determine the relationship of factors and the prevalence of young unlicensed drivers involved in a fatal crash.

Learning Objectives: Recognize the problem of young unlicensed driving. Learn about factors associated with the occurrence of young unlicensed drivers. Understand limitations in studying young unlicensed drivers.

Traumautopsy Protocol: An Evaluation of Postmortem Computed Tomography (PMCT) Combined With Accident Reconstruction for Analyzing Fatal Motor Vehicle Crash Injuries

Mark Sochor, MD[1] (Pres), M Trowbridge, MD, MPH[1], S Patel, MD[2], T Bollinger[2], R Maio, DO, MS[1]

[1]University of Michigan Injury Research Center, Ann Arbor, MI; [2]University of Michigan Program for Injury Research and Education, Ann Arbor, MI

Background: Bioengineers rely upon analysis of motor vehicle crash (MVC) injury patterns to improve occupant safety. NASS and CIREN surveillance systems provide extensive data for nonfatal MVC. However, analysis of fatal MVC relies upon autopsies which often do not include detailed description of injuries. Whole body PMCT could provide a non-invasive complement to autopsy for improved injury analysis following fatal MVC.

Methods: Traumautopsy team is dispatched following fatal MVC in Jackson County, Michigan. Protocol includes: 1) preliminary accident reconstruction prior to movement of the victim or vehicle, 2) whole body PMCT (< 6 hours after death) and 3) autopsy. Radiologist reviewing PMCT and pathologist are reciprocally blinded. PMCT and autopsy results recorded along with 3-D reconstructive images of major injuries. Positive findings from either exam considered to be true positives.

Results: 7 subjects evaluated as of January 2005. Sensitivity of PMCT was equivalent to autopsy for detection of brain injuries and superior in detection of bony injury. Autopsy was superior in detection of soft tissue injuries. Traumautopsy protocol provided more detailed descriptions of injuries than autopsy alone. Accident investigation data combined with 3-D injury reconstructions also allowed determination of injury mechanisms.

Conclusions: PMCT provides a non-invasive, feasible, and effective complement to autopsy for analyzing injuries following fatal MVC. Combining PMCT with accident reconstruction allows determination of injury mechanisms. Focused integration of PMCT into fatal MVC surveillance could greatly benefit automotive safety engineers.

Learning Objectives: Understand the critical value of detailed fatal MVC injury pattern data to automobile safety engineers. Identify the obstacles to obtaining adequate fatal MVC injury

pattern data by traditional autopsy as performed by medical examiners. Recognize the potential for PMCT to increase the availability, quality, and utility of fatal MVC injury pattern data for use in evaluating occupant safety technologies.

Booster Seat Use in an Urban and Rural Latino Community: A Qualitative Study

Beth E Ebel, MD[1] (Pres), GD Coronado, PhD[2], FP Rivara, MD[1], FE Vaca, MD[3], T Martinez[2], K Fitzgerald [4], B Thompson, PhD[2]

[1]University of Washington, Seattle, WA; [2]Fred Hutchison Cancer Research Center, Seattle, WA; [3]UC Irvine, Orange, CA; [4]Children's Hospital & Regional Medical Center, Seattle, WA

Background: Prior research found low booster seat use among Latino communities in Washington.

Objective: To understand barriers and facilitators of booster seat use among Latino parents and determine key messages for a community intervention campaign.

Design/Methods: Bilingual interviewers conducted 1:1 elicitation interviews with Latino parents in the Yakima Valley and King County, WA. We recruited Spanish-speaking Latino parents with booster-eligible children, half of whom were not compliant with booster recommendations. Elicitation interviews were recorded, translated, transcribed, and independently coded by three researchers. Factors occurring in the top 2 tertiles were placed in our models. We determined the major factors underlying booster seat usage and influencing behavior change.

Results: We interviewed 91 Latino mothers (62%) and fathers (38%) of booster-eligible children. 48 parents used a booster seat, and 43 were inconsistent or non-users. Motivators for booster use were child safety and concern for getting a ticket; many also felt less distracted when the child was properly restrained. Facilitators included affordability, ease of use, spouse support, and children liking the seat. Approximately 2/3 were willing to purchase a seat. Respondents felt comfortable asking their child or spouse to use the seat; they were much less likely to ask a friend or relative. Barriers were the belief that their child was too big/old, child resistance, and cost. Parents felt that driving was risky, and worried about children flying forward in the car, often with anecdotal experience. Women were more likely to cite child safety as a motivator (91% vs. 69%), and fewer men than women noted cost as a barrier (34% vs. 61%). The key motivator for booster users was child safety (94%) and concern about receiving a ticket (94%). Among non-users, fear of receiving a ticket (79%) was more often cited than child safety (70%).

Conclusions: Intervention strategies for Latino families may benefit from understanding culturally specific determinants of behavior change.

Learning Objectives: Identify barriers to proper use of proper child restraints among Latino parents. Identify factors that may motivate a change in child restraint behavior. Review methods to elicit culturally appropriate intervention themes.

Motor Vehicle Injury

Monday 4:45 - 6:15 PM

A Comparative Analysis of Impaired Driving Laws in the U.S. and Canada: The Impact Of Politics, Data, and Advocacy

Linda C Degutis, DrPH[1] (Pres), N Giesbrecht, PhD[2], G Stoduto, MPH[2], H Sayward, MS[1]

[1]Yale University, New Haven, CT
[2]Centre for Addiction and Mental Health, Toronto, Canada

Background/Objectives: U.S. and Canadian driving while impaired (DWI) policies differ in several ways: federal or state level policy; blood alcohol concentration (BAC) limits for DWI; and the minimum legal drinking age (MLDA). We examined the interplay of societal, political, and policy dimensions on introduction of DWI laws; examined the effect of federal incentives on introduction and passage of DWI laws; and described the ways in which data and victims' stories were used.

Methods: Our multifaceted approach included: 1) review of DWI legislation in selected states and provinces over the past 10 years; 2) abstraction of information related to: existing alcohol policies; legislative history for DWI legislation; 3) key informant interviews; and 4) review of federal legislation and initiatives. Interviews were recorded, transcribed, and then coded using NVivo software, allowing for identification of common themes. Other data abstracted were coded in Microsoft Access and analyzed using SPSS.

Results: In the U.S., federal disincentive have resulted in the passage of a .08 BAC limit in all states. The federal disincentive did not lead to broad passage of open container laws, or repeat offender sanctions. U.S. state policymakers expressed resentment that federal legislators were interfering with states' rights by creating disincentives. Canadian provinces are moving toward BAC limits that are lower than

required by federal law. No U.S. state passed a BAC limit of < .08. Advocates on both sides of the issue used data to support their arguments for or against the laws.

Conclusion: There are major differences between U.S. and Canadian DWI laws resulting from federal vs. local (state or province) control over the laws. Data is often used in combination with anecdotes and victims stories.

Learning Objectives: At the end of this presentation, the learner will be able to: Describe issues related to federal disincentives related to the passage of DWI legislation. Discuss ways in which data are used to advocate for DWI policy. Describe at least 2 methods of evaluating policy development and implementation.

Brief Alcohol Intervention Following Alcohol-Related Crashes

Marilyn S Sommers, PhD (Pres), JM Dyehouse, SR Howe

University of Cincinnati, Cincinnati, OH

Background and Objectives: Approximately 40% of motor vehicle fatalities in the U.S. are alcohol-related. Hospital-based Interventions to reduce drinking are of particular importance to public health. The objective of this study was to test the effectiveness of brief intervention strategies to reduce alcohol consumption and other health-related outcomes in the year after an alcohol-related vehicular injury (ARVI).

Methods: The study was a randomized controlled trial of two types of brief intervention with follow-up at 3, 6, and 12 months. Subjects with ARVI who were admitted to Level I Trauma Centers were eligible for enrollment. Enrolled subjects were randomized to a control, simple advice, or brief intervention condition. Primary outcome variables were alcohol consumption (standard drinks/month, binges/month), adverse driving events (driving citations, traffic crashes), and changes in health status (hospital and emergency department admissions).

Results: The study enrolled 187 subjects at baseline and retained 100 subjects across the 12 months. Subjects had a significant decrease in alcohol consumption and adverse driving events at 12 months as compared to baseline. Mean baseline standard drinks/month was 56.80 (SD 63.89) and mean binges/month 5.79 (SD 6.98); at 12 months mean standard drinks/month was 32.10 (SD 53.20) and mean binges/month 3.21 (SD 6.17). There were no differences in alcohol consumption, adverse driving events, and health status by condition.

Conclusions: Whether the reduction in alcohol consumption and traffic citations were a result of the crash, hospitalization for injury, screening for alcohol use, or combination of these factors is difficult to determine. Further work is needed to understand the mechanisms involved in reductions of health-related outcomes and the role of brief intervention following an ARVI.

Learning Objectives: Identify the effectiveness of two types of brief intervention in problem drinkers who are injured in vehicular crashes. Evaluate the potential of brief interventions to be used with trauma patients to reduce future injury and hospitalization. Discuss the role of screening alone in the problem drinking injury population. Funded by the Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

Designing an Optimal Search Strategy to Identify Studies That Evaluate Interventions to Prevent Alcohol-Impaired Driving

Cindy Goss, MA[1] (Pres), S Lowenstein, MD, MPH[1], I Roberts, MB, BCh, MRCP, PhD[2], C DiGuiseppi, MD, MPH, PhD[1]

[1]University of Colorado Health Sciences Center, Denver, CO
[2]London School of Hygiene and Tropical Medicine, London, UK

Background/Objectives: Systematic reviews synthesize existing evidence to identify effective injury prevention interventions. “Systematic” implies methodical procedures to find studies, but database search strategies are often subjectively developed and may miss relevant studies, biasing reviews. Conducting systematic reviews of alcohol-impaired driving interventions is challenging because of non-standard terminology and multiple disciplines involved. To develop a comprehensive register of controlled studies of impaired-driving interventions for preparing systematic reviews, we applied objective methods to search strategy development.

Methods: We performed word-frequency analysis of titles/abstracts/keywords on a development subset randomly selected from a “gold-standard” database of 131 known controlled studies evaluating alcohol-impaired driving interventions. Identified words were tested in the Social Science Citation Index/Science Citation Index Expanded database (SSCI/SCI) containing >27,000,000 records. Outcomes included sensitivity (proportion of gold-standard studies retrieved) and precision (proportion of all retrieved studies that were gold-standard studies). Words meeting

varying sensitivity and precision thresholds were combined into search strategies and tested in SSCI/SCI for cumulative sensitivity and precision. The best strategies were retested with a validation subset.

Results: Word sensitivities ranged from 2.7%-48.0%, precision from 0.2%-100.0%. Search strategy sensitivities ranged from 22%-100%, precision from 0.3%-30%. The optimal strategy had cumulative sensitivity of 77.3% and 83.9%, and precision of 4.4% and 3.6%, in development and validation subsets, respectively, retrieving 15,781 citations in SSCI/SCI.

Conclusions: We used objective methods to develop search strategies to identify studies evaluating alcohol-impaired driving interventions. The optimal strategy had acceptable sensitivity, and retrieved sufficiently few articles from a vast multidisciplinary database to be feasible for use in creating a register of controlled studies for preparation of systematic reviews. Using objective methods to develop search strategies may improve the quality of systematic reviews.

Learning Objectives: Understand objective methods used to develop search strategies for systematic reviews, including free-text searches, word-frequency analysis, and calculation of sensitivity and precision of search terms and strategies. Learn to use objective methods to develop an optimal search strategy. Learn about a register of controlled evaluations of interventions to prevent alcohol-impaired driving, developed with the Cochrane Collaboration Injuries Review Group.

Knowledge of American Drinking and Driving Laws and Prevention Messages Among Spanish Speaking Males

Janice Williams, MSED (Pres), R Schafermeyer, MD, T Cruz, MPH, M Anderson, MPH

Carolinas Medical Center, Charlotte, NC

Background: Data from DUI court cases indicated a substantial increase in cases among the Hispanic population. Data further delineated that the intoxicated level at which they were driving was substantially higher than that of the rest of the population in Mecklenburg County. It was theorized that due to differences in the laws between the United States and Spanish Speaking countries, there was an educational gap of alcohol related driving issues. And that current marketing messages were not being recognized by the Spanish speaking population due to cultural differences.

Methods: Classes were conducted to Spanish speaking males currently incarcerated in the Mecklenburg County Jail and to Spanish speaking males court mandated to take a defensive driving course due to a traffic related violation. Pre tests were collected to show a deficiency in knowledge about the issues and current prevention messages. Post tests were collected to determine if a one hour class could improve knowledge levels.

Results: A significant number of participants did not know the current law or recognize the current prevention messages such as Zero Tolerance and Booze it and Lose it. Substantial knowledge gains were seen post test for a majority of participants.

Conclusions: While a linkage cannot be made that through this increased knowledge, there is a reduction in DUI related crashes among this population. This project shows a need for alcohol and driving related education within the Spanish speaking community. And a need for prevention messages that are better targeted to the Spanish speaking community. Examples of a photo novella and poster campaign will be shown. Further research is needed to determine if a link can be made between this education and DUI related crash reduction.

Learning Objectives: Recognize educational needs in the Spanish speaking community. Identify cultural issues that need to be addressed in the Spanish speaking community related to DUI education. Develop plan to integrate DUI education in participants home community.

Prevalence of Driving After Binge Drinking

Ernest E Sullivent, MD[1] (Pres), TS Naimi, MD, MPH[1], RD Brewer, MD, MSPH[1], CA Okoro, MPH[1]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background: Alcohol-related motor vehicle crashes resulted in over 17,000 fatalities and 275,000 injuries in the United States in 2003. Binge drinking (consuming ≥5 drinks on an occasion) generally results in blood alcohol concentrations ≥0.08% has been strongly associated with self-reported alcohol-impaired driving. However, no study has assessed the prevalence of driving after a specific binge episode or how this relationship varies by individual or environmental factors.

Methods: We analyzed 2003 data from binge drinking module, which ascertained whether binge drinkers a motor vehicle during or within 2 hours of their most recent binge episode. We assessed demographics, drinking patterns,

and contextual factors (e.g., drinking location) of those who drove. Odds ratios and confidence intervals were calculated using logistic regression.

Results: Among 7,058 binge drinkers, 11.9% reported driving during or soon after their most recent binge episode. Mean number of drinks consumed (8.1) did not differ between drivers and nondrivers. Among those who drove, 71% consumed ≥6 drinks and 24% consumed ≥10 drinks. s (e.g., bars, restaurants) settings odds ratio 3.1; 95% confidence interval 2.3-4.2, and drinking in public settings most (.1). Males, persons aged >35 years, and single persons were significantly more likely to drive after binge drinking.

Conclusions: Approximately 12% of binge drinkers drive during or soon after a binge drinking episode. Driving after binge drinking was particularly common among those drinking in public settings. Aggressive interventions (e.g., server training programs) are needed to reduce binge drinking and alcohol-related crash deaths.

Learning Objectives: Describe the prevalence of driving after binge drinking. Identify individual and environmental factors associated with driving after binge drinking. Describe interventions for binge drinking in public settings. Key words: alcohol drinking, drinking behavior, alcoholic intoxication, surveillance.

Random Assignment Evaluation of the DUI Court Program in Maricopa County (Phoenix), Arizona

James F Frank, PhD (Pres), ME Vegega, PhD

National Highway Traffic Safety Adminstration, Washington, DC

Background/Objectives: DUI courts are a specialized form of intensive supervision for repeat DUI offenders. Behavioral contracts between the court (signed by the judge) and the offender are established, whereby the offender is expected to remain sober, engage in treatment, attend support meetings (e.g., Alcoholics Anonymous), report regularly to a probation officer and agree to periodic breath testing to verify sobriety. Offenders in DUI court earn their way through a series of paths ultimately culminating in graduation. The primary objective of this program is to reduce recidivism among repeat DUI offenders. The objective of the evaluation was to determine whether recidivism rates of persons attending DUI court are lower than those of controls.

Methods: The Maricopa County agreed to a random assignment design whereby repeat offenders were assigned to DUI Court or regular county probation services after serving a period of prison time. In addition to tracking offenders' performance while they were participating in the program, state records were obtained to determine recidivism rates of offenders up to two years after they completed the program.

Results: Recidivism rates of 387 offenders assigned to the DUI Court group are compared to the equal number receiving traditional probation services. Considering persons who graduated from DUI Court, 6.7% recidivated during the post-graduation test period, compared to 11.7% of the comparable control subjects. Descriptive information about DUI court participants, compared to the controls is also presented.

Conclusions: This evaluation was a stringent test of the effectiveness of this DUI Court because of its random assignment design, and because control subjects' probation requirements were already quite low. This evaluation suggests that the DUI Court concept shows great promise, though evaluation of additional programs is still needed. Cost-benefit analyses also need to be conducted.

Learning Objectives: Describe the function of DWI Courts and why they may be used. Describe how DWI Courts differ from standard probation. Identify what criteria should be met to justify the labor and cost-intensive nature of DUI Courts, both in terms of improved recidivism rates as well as cost-benefit analyses.

Motor Vehicle Injury

Tuesday 8:30 - 10:00 AM

Development of a Safe Speed: A Photo Speed Enforcement Campaign in Mecklenburg County

Janice Williams, MSED[1] (Pres), R Schafermeyer, MD[2], D Haggist[3], P Vereen[4]

[1,2]Carolinas Medical Center, Charlotte, NC
[3,4] Charlotte Mecklenburg Police Department, Charlotte, NC

Background: In analyzing crash data for Mecklenburg County North Carolina, speed was found to be the biggest causative factor.

Methods: Data was compiled as it related to local crashes and speeding, including crash locations, injury rates, and costs. A team of local safety advocates worked to develop support for the use of a photo speed cameras along the street corridors with the highest incidence of speed related crashes.

Results: Speed photo enforcement is used along fourteen street corridors within Mecklenburg County North Carolina. In the first three months of operation, a fourteen percent drop in crashes has been seen in those areas.

Conclusion: The use of speed cameras has initially made a difference in the crash rate on the roads it is used on in Mecklenburg County. Current, past, and future limitations for this type of project will be discussed. Including type of cameras used lighting, public and media reactions, current and future legislative needs, and other speeding campaign aspects.

Learning Objectives: Describe support and data needed to develop this type of enforcement campaign. List obstacles that will need to be addressed in developing this type of program. Identify if program is applicable to participants city.

Do State Motorcycle Helmet Laws Influence Bicycle Helmet Use Among Adolescents?

Timothy E Lum, MD, MPP (Pres), JJ Bazarian, MD, MPH, PC Winters, MS, SG Fisher, PhD

University of Rochester Medical Center, Rochester, NY

Objectives: Determine the relationship between state motorcycle (MC) helmet laws and self-reported bicycle helmet (BH) use among adolescents with control for appropriate confounders.Describe independent predictors of bicycle helmet use by adolescents.

Quantify proportion of adolescents who wear bicycle helmets and which subpopulations are less likely to wear helmets.

Methods: Secondary analysis of self-reported BH use as determined by question 9 of the 2001 Youth Risk Behavior Survey (YRBS). YRBS is a nationally representative sample of students in grades 9-12 conducted biennially by the CDC. Current analysis restricted to surveys from states able to supply state weighted data, and to respondents who reported riding a bike within previous year. Relationship between MC helmet laws (non, partial or full) laws and self-reported BH use analyzed using multivariate logistic regression with adjustment of variance to account for weighted probability sampling. Potential confounders of the relationship between state MC helmet law and BH use included presence of state bicycle helmet law, gender, race, grade level, and each state's mean temperature and precipitation. ORs were calculated for each significant independent variable ($P<0.05$).

Results: Surveys from 21 states were obtained, all had either full or partial MC helmet laws. 40,664 respondents (weighted 3,100,000) answered question on BH use. Of these, 57.3% were male, 61.7% white and 81.4% reported never wearing a helmet. Male gender (OR 0.806; 95% CI 0.7334-0.884); presence of a full state MC helmet law (OR 0.827; CI 0.714-0.958); presence of a state bicycle helmet law (OR 2.234; CI 1.915-2.606); and lower grade levels, 9th and 10 graders (OR 1.413; CI 1.279-1562) were independent predictors of BH use.

Conclusions: The presence of a state bicycle helmet law is the strongest predictor of self-reported BH use among adolescents, however, the presence of a full state MC law appears to be associated with a paradoxical decrease in self-reported BH use among adolescents. Multidisciplinary, qualitative studies are needed to help identify how MC helmet laws influence actual BH use.

Effectiveness of a Multifaceted Intervention to Increase Booster Seat Use Targeting Rural Communities in New York State

Debra Douglass, MS, CHES (Pres)

New York State Department of Health Bureau of Injury Prevention, Albany, NY

Background: Motor vehicle crashes are a leading cause of death and hospitalizations for children aged 4-8 in New York State. Many deaths and injuries can be prevented if children are properly restrained using booster seats, however, less than 20% are using them. The New York State Department of Health implemented a CDC funded multi-faceted intervention to increase booster seat use in three rural counties. The study evaluated the effectiveness of individual and combined community and school based program components.

Objectives: Participants will be able to describe the school and community components of a multi-faceted intervention study to increase booster seat use, identify child and parental barriers to booster seat use and strategies to positively impact behavior and describe methods utilized to gather process, impact and outcome data to evaluate the intervention.

Methods: Three counties received a varying number of program components; public education and awareness campaign, booster seat distribution program, and an

elementary school campaign while a fourth county served as the control. Baseline and outcome booster seat use data was collected through interviews with parents/guardians of 4-8 year olds. Barriers and reasons for non-use were identified through focus groups and as part of the interview process. Observed restraint use data was collected in the counties after the interventions were conducted.

Results: Reported booster seat use increased in the three target counties compared to the control county. The largest increase occurred in the county that instituted all three components (21% to 53%). Agency collaboration was more effective at prompting the public to seek out booster seat information than providing public access to a toll-free booster seat hotline number. First and second graders were more knowledgeable about safe riding practices after participating in the school campaign.

Conclusions: An elementary school and community awareness campaign coupled with booster distribution program were most effective at increasing booster seat use in rural communities.

Misuse of Child Restraints

Maria E Vegega, PhD[1] (Pres), A Block[1], LE Decina[2], KH Lococo[2]

[1]National Highway Traffic Safety Administration, Washington, DC
[2]Transanalytics, Kulpsville, PA

Background/Objectives: Incorrect use of child restraints can lead to serious injury in the event of a crash. A study conducted in the mid-1990's found that, of children observed in child restraints, four-out-of-five were incorrectly used. The purpose of this research was to obtain a current measure of child restraint system (CRS) misuse among the general public.

Methods: The study focused on forms of misuse that could reasonably be expected to raise the risk of injury, i.e. "critical misuse." Following training on field procedures and protocols, observer teams checked restraint use of children under 80 pounds in six states: Arizona, Florida, Mississippi, Missouri, Pennsylvania, Washington. Field sites included urban, suburban and rural areas, representing a range of socio-demographic and economic characteristics.

Results: Data were collected on 5,527 children in 4,126 vehicles. Most children (62.3%) were restrained in a CRS, but 25.9% used a safety belt and another 11.8% were completely unrestrained. CRS use was common among infants under 20 lbs (97.1%) and toddlers 20 to 39 lbs (86.4%), but fell sharply among children 40 to 59 lbs (41.7%) and 60 to 79 lbs (10.9%). Almost one-fourth of children 60 to 79 lbs (24.2%) and 15.2% of children 40 to 59 lbs were completely unrestrained. Critical CRS misuse occurred in 72.6% of all observed CRSs. The most common misuses were loose vehicle safety belt attachment to the CRS and loose harness straps securing the child to the CRS.

Conclusions: Misuse of CRSs remains a problem for child passenger safety. Older children are less likely to use CRSs than infants and toddlers, and are more likely to be completely unrestrained. Effective strategies are needed to reduce both critical misuse and nonuse among children.

Learning Objectives: Describe CRS use among different weight categories of children. Identify critical types of CRS misuse. Describe strategies for reducing CRS misuse.

Motor Vehicle Crashes of Teenage Drivers in New York State

Michael J Bauer, MS (Pres), MX Zhu, MD, MS

New York State Department of Health Bureau of Injury Prevention, Albany, NY

Background/Objectives: The leading health threat to teenagers in the United States is motor vehicle crash-related injuries, which account for two of five deaths among teenagers 16 to 19 years old. In order to lessen this health threat New York State passed a new graduated licensing law, effective September 2003.

Methods: Using Crash Outcome Data Evaluation System (CODES) databases, this study compares the crash characteristics and outcomes of drivers 16 to 19 years old with drivers 30 to 64 years old, statewide. In addition, a log binomial model is used to characterize the crash factors involved with teenage drivers. Furthermore, the motor vehicle crash and hospitalization rates of teenager drivers in Nassau and Suffolk counties are compared to other New York State counties. These two counties have previously had a county-level law similar to the new state-level graduated licensing law.

Results: Driver's age plays a significant role in the rate of motor vehicle crashes. In crashes involving teenage drivers, the teen driver was two to three times more likely to be at fault. Contributing factors include gender, age of passengers, and age of vehicle. Teenage drivers are more likely to be involved in single vehicle, property damage crashes, and fatal crashes than drivers age 30-64. The graduated licensing law affects new drivers, mostly 16 year olds. This is the only age where both Nassau and Suffolk counties have lower rates of motor vehicle crashes and related hospitalizations compared to upstate New York.

Conclusion: Motor vehicle crashes continue to be a major health issue for teenagers. Understanding the characteristics and outcomes of these crashes, along with implementing prevention activities will help decrease this health burden.

Learning Objectives: Describe differences in crash characteristics and outcomes between drivers age 16 to 19 and those age 30-64. Describe the crash factors associated with teenage drivers. Identify a successful implementation of the graduated licensing law.

The Risk of Fatal Injury Associated With Light Trucks During Two-Vehicle Crashes: An Estimating Equations Analysis of Matched-Pair Cohort Data

Thomas Rice, MPH, PhD (Pres), J Kraus, MPH, PhD

Southern California Injury Prevention Research Center, University of California Los Angeles, Los Angeles, CA

Background/Objectives: Much anecdotal and some empirical evidence supports concerns that light trucks (pick-up trucks, vans, and sport utility vehicles) increase the risk of severe injury to occupants of other motor vehicles during traffic crashes. While studies have noted associations between vehicle size and injury outcomes, many have suffered form methodologic shortcomings. The objectives of this study were to (1) estimate the effect of light trucks on the risk of fatal injury to occupants of the other vehicle when they are involved in traffic crashes and (2) compare the results obtained by applying different analytic methods.

Method: A matched-set cohort study was conducted using data from the U.S. Fatality Analysis Reporting System (FARS) data on two-vehicle crashes for the years 1995 through 2001. Estimating equations, conditional Poisson, and conditional logistic regression methods were applied to the data. Variables representing other potential confounders were entered into the models. Sensitivity analyses were conducted to explore to what extent uncontrolled confounding and selection bias were likely to have influenced the results.

Results: During the six-year study period, 6,485 eligible crashes were recorded in FARS involving 12,970 drivers, of which 4,697 suffered fatal injuries. Death risk ratio estimates and confidence intervals are presented for various personal and vehicle characteristics. Findings obtained from each of the three regression techniques are compared. Interpretation difficulties and the strengths and limitations of the three techniques are discussed.

Conclusion: Light trucks may interfere with the ability of other motor vehicles (cars or other light trucks) to protect their occupants. Changes to the design of light trucks are likely to be accompanied by changes in the risk of death to other road users.

Learning Objectives: Identify the methodologic challenges in studying the effect of light trucks on injury risk. Describe a matched-pair cohort study. Identify risk factors for occupant death during car-light truck crashes.

Motor Vehicle Injury

Tuesday 10:15 - 11:45 AM

Increasing Motor Vehicle Restraint Use Among Hispanic Parents and Children

Pamela W Goslar, PhD (Pres), N Quay, RN

St. Joseph's Hospital and Medical Center, Phoenix, AZ

Background/Objectives: Inappropriate restraint use is a leading cause of occupant death and disability among all age groups. The Hispanic population appears to be at greater risk. Most restraint use education is developed for the English-speaking population. The purpose of this study was to quantify change in restraint use, particularly booster seats, among a Hispanic population following safety seat distribution and an educational program using culturally appropriate material.

Methods: Pre- and post-observational studies were completed at participating schools. Observers were trained in the use of the data collection tool and observed as children were dropped off in the morning approximately one week prior to and three months following the parent education program. Observers noted restraint use and approximate age for all individuals. Driver gender, ethnicity/race and type of vehicle were recorded. The observers rotated schools for the post-observation to reduce the possibility of behavior change due to familiarity with initial observers.

Results: Analysis was completed for 585 individuals with 50.4% in the pre-intervention group. Hispanic drivers represented approximately 75% of drivers identified at both pre-and post-observations. Child and booster seat use increased from 29.2% to 87.9% at three months following the intervention (p-value < 0.0001). While the intervention was focused on child restraints, non-use of seat belts among those over 15 years decreased from 68.4% to 31.6% (p-value < 0.0001).

Conclusion: The curriculum used was developed specifically for a Hispanic audience. Based on the above results it appears to be highly effective for this population. Further research comparing this program to other more generally focused programs needs to be undertaken. Long-term follow up would add strength to the results.

Learning Objectives: By the close of the presentation participants will be able to: Describe the intervention used in this program. Identify changes in restraint use among this population. Discuss issues related to the observational tool used in this study.

Increasing Seat Belt Use Among African Americans: An Integrated Approach to Preventing Excess Death and Injury

Irwin A Goldzweig, MS (Pres)

Meharry Medical College, Nashville, TN

Background: Based on the results of a 1999 Meharry Medical College study that documented the disparity in seat belt use between African Americans and the overall population, and the recommendations of the Blue Ribbon Panel's 2000 "Report to the Nation," an academic/business partnership was formed between Meharry Medical College and State Farm® to address the challenges of what was called a "public health crisis."

Objectives: This workshop will frame the issue of preventable death and injury among African Americans in the context of high risk subgroups identified through database analyses conducted by Meharry-State Farm Alliance researchers. It will also provide an example of community-based research in four major cities with significant African American populations that demonstrates a persistent disparity in seat belt use and therefore a disparity in preventable death and injury.

Methods: The Alliance's comprehensive approach integrates epidemiological and behavioral research with innovative approaches to community-based research which is translated into education and public awareness programs and a strong emphasis on proactive public policy initiatives.

Conclusion: The workshop concludes with a presentation of a theoretical model of risky behavior to help understand the forces that influence high risk behavior and how interventions should be designed using a multi-factorial model.

Learning Objectives: Participants will learn about the disparity in seat belt use between African Americans and the overall population. Participants will learn an approach to preventing excess death and injury that integrates research, education and public awareness, and public policy. Participants will learn about a model of risky behavior developed by the Meharry Medical College Center for Optimal Health.

Injury Data Leads to Identification of Noncompliant Seat Belt Use in African American Population and Development of New Prevention Messages

Janice Williams, MSED, Robert Schafermeyer, MD (Pres), T Cruz, MPH, M Anderson

Carolinas Medical Center, Charlotte, NC

Background: Mecklenburg county emergency department data showed an increase in the number of motor vehicle related injuries occurring in the African American and Hispanic community. It was believed this was due in part to noncompliant seat belt use rate.

Methods: Observational seat belt use studies were conducted in neighborhoods and churches known to be occupied by a majority of Caucasians, African Americans, and Spanish speaking individuals. The results showed that African Americans had a significantly lower seat belt usage rate, especially among the front passengers. Focus groups were then conducted within that population to determine reasons for noncompliance and possible new prevention messages that could be developed.

Results: African American drivers and front seated passengers had a lower seat belt usage rate than Hispanic or Caucasian drivers. Focus groups of this population showed a nonresponse to the current prevention messages and identified four targeted messages that might have more of an impact on that at risk population. Four posters were developed depicting those messages for dissemination into the community.

Conclusions: Culturally targeted messages are needed for the African American population to try and increase seat belt usage.

Learning Objectives: Recognize how injury data can lead to identification of targeted safety issues in a community. Recognize the need for different messages based on the targeted population. Define some possible new seat belt use messages for the African American population.

Restraint Use Among Northwest American Indian Children Traveling in Motor Vehicles

Jodi A Lapidus, PhD[1,2], Francine C Romero, PhD[6] (Pres), NH Smith, BA[3], BE Ebel, MD, Msc, MPH[4,5]

[1]Department of Public Health and Preventive Medicine, Division of Biostatistics, Oregon Health & Science University, Portland, OR; [2]Centers for Disease Control and Prevention, Center for Healthy Communities, Oregon Health & Science University, Portland, OR; [3]Northwest Tribal Epidemiology Center, Northwest Portland Area Indian Health Board, Portland, OR; [4]Harborview Injury Prevention & Research Center, University of Washington, Seattle, WA; [5]Department of Pediatrics, University of Washington, Seattle, WA; [6]Northern Plains Tribal Epidemiology Center, Aberdeen Area Tribal Chairmen's Health Board, Rapid City, SD

Objectives: American Indian (AI) children are more likely to be injured in motor vehicle crashes compared to children of other races. The objective of this study was to measure infant seat, child safety seat, and booster seat use, and determine factors associated with proper child restraint in six Northwest tribal communities.

Methods: We surveyed vehicles in six tribes in Idaho, Oregon, and Washington. Associations between proper restraint and child, driver, and vehicle characteristics were analyzed using logistic regression models for clustered data.

Results: We observed 775 children traveling in 574 vehicles, 41% of who were unrestrained. Proper restraint was 64% among infant seat-eligible, 41% among child seat-eligible, and only 11% among booster seat-eligible children. Proper restraint was associated with child age (OR per year: 0.60, 95% CI: 0.48-0.75), seating location (OR front vs. rear: 0.27, 95% CI: 0.16-0.44)) driver seat belt use (OR: 2.39, 95% CI: 1.51-3.80) and relationship (OR non-parent vs. parent: 0.28, 95% CI: 0.14-0.58). Many drivers reported that they felt children were old enough to use an adult seat belt at or before 6 years (49%) and/or 60 lbs (57%), though recommendations state 8 years and 80 lbs. Only 38% of drivers correctly identified whether their tribe had child safety seat laws; this percentage was slightly higher for tribes who had enacted own laws (46%) versus those who were subject to state law (24%).

Conclusions: Children in these communities are inadequately restrained. Restraint use was exceedingly low among booster-eligible children, and children riding with unrestrained adults. Interventions emphasizing appropriate restraint use and enforcement of child passenger safety laws could potentially reduce the risk.

Ride Safe: Developing a Head Start-Based Program to Increase Child Safety Seat Use Among American Indian Children

Christopher W Allen, MS[1] (Pres), DM Kuklinski, MS[2], RJ Letourneau, MPH[3]

[1]Indian Health Service (IHS), White Earth, MN; [2]Indian Health Service, Bemidji, MN; [3]University of North Carolina, Chapel Hill, NC

Background/Objectives: Motor vehicle crashes (MVCs) are the leading cause of death for American Indian/Alaska Native (AI/AN) children. Research shows that use of child safety seats (CSSs) reduces MVC-related mortality, however, AI/AN CSS usage rates are often less than 20% in pre-school aged children. This presentation describes the development of a child passenger safety (CPS) program to increase CSS use among Tribal Head Start families.

Methods: Formative evaluation (e.g., focus groups, technical review) was conducted to develop the program, which includes: tailored curriculum for Head Start; community-based CPS educational activities; CPS training; CSS provision; and CSS observational surveys/follow up home visits. Process evaluation activities (e.g., coordinator surveys/interviews) from 2002-present have led to program improvements.

Results: Focus groups identified barriers to CSS use (e.g., uncooperative children, CSS availability). Expert technical review informed curriculum and evaluation activity development. Coordinator surveys/interviews during Year I and II identified challenges to program implementation and streamlined educational and evaluation activities. From 2002-2004, 14 Tribal Head Start sites in six states participated in Ride Safe. 41 Head Start Center staff obtained CPS Practitioner /Technician training. Over 1,600 families were reached with CPS educational materials and over 1,100 CSSs have been provided. At the community level, Ride Safe has enhanced CPS coalition development and capacity. Program marketing has resulted in expanded financial support ($150,000) from state/national sources.

Conclusions: Adapting an evidence-based effective strategy (CSS use) for Tribal Head Start Centers is an appropriate approach for use in AI/AN communities. Diffusion of this program to other Tribes/Tribal Entities and non-Tribal groups is promising.

Learning Objectives: List the key reasons Tribal community members cite for not using child safety seats. Discuss the differences between the Head-Start based Ride Safe program and standard child safety seat distribution programs. Highlight the primary successes and challenges of implementing a CPS program within a Tribal Head Start setting.

Motor Vehicle Injury

Tuesday 1:45 - 3:15 AM

Crash Culpability, BAC Levels, and Seat Belt Use Among a Cohort of Hospitalized Drivers

Patricia C Dischinger, PhD (Pres), CA Soderstrom, MD, SM Ho, MS, JA Kufera, MA

National Study Center for Trauma and EMS, University of Maryland, Baltimore, MD

Background: The objective of this research was to determine culpability rates for crashes for drivers with and without positive BACs at the time of their crash, and to determine any other factors associated with crash culpability.

Methods: Using probabilistic linkage techniques, statewide hospital discharge records were linked with police reports for all drivers admitted to a large Level I trauma center between 1997-2001. These data were then linked to BAC findings. The final linked database included 6,122 drivers. Data on culpability as well as seat belt use were obtained from the police report.

Results: Almost three quarters (73.8%) of drivers were deemed to be culpable for their crash. The prevalence of +BACs was 19.1%, and BAC+ drivers were significantly more likely than BAC- drivers to be culpable (93.1% vs. 64.5%, OR= 7.45, p<.001). Unbelted drivers exhibited the highest odds of culpability for BAC+ relative to BAC-, which was almost 3 times the corresponding odds for belted drivers. Among drivers aged 41-60, the odds of culpability for low levels of BAC (i.e., BAC 20-49 mg/dl vs. BAC-) were half that for BAC 100+ vs. BAC- (4.98 vs. 10.79, respectively). In addition, unbelted drivers were more than twice as likely as belted drivers to be culpable (OR=15.80 vs. 7.37, respectively) when comparing a BAC level of at least 100 mg/dl with BAC-.

Conclusions: Seat belt use seems to be a marker for risk-taking behavior above and beyond the role of alcohol use. Even among drivers who were drinking, those who were unbelted were significantly more likely to have been culpable for their crash. Interventions should be targeted to both types of behavior, and not merely substance abuse.

Learning Objectives: Define rates of crash culpability for BAC+ and BAC- drivers. Define relationship between seat belt use and crash culpability, taking into account BAC status. Describe implications for injury prevention.

Demographic and Behavioral Correlates of Road Rage: Results From a National Survey

Mary Vriniotis, MS (Pres), D Hemenway, PhD, M Miller, MD, MPH, ScD

Harvard Injury Control Research Center, Boston, MA

Background: Expressing anger toward other drivers has been associated with dangerous and illegal driving behaviors such as running red lights, speeding, driving drunk, and car crashes. Little is known about risk or protective factors that may be associated with aggressive driving behavior. We set out to examine correlates of one measure of "road rage": making obscene gestures at other drivers.

Methods: Data come from a national random-digit-dial survey of 2,515 licensed drivers in 2004. We used multivariable logistic regression to explore correlates of making obscene gestures while taking into account various characteristics such as age, race, gender, social capital, trust, smoking, alcohol use, trouble with law enforcement, gun carrying in the car, and whether other motorists made obscene gestures at them.

Results: Seventeen percent (17%) of drivers made obscene gestures at other drivers over the previous year. In multivariate adjusted analyses, hostile driving behavior was related to: male gender (20% vs. 14%), younger age (34% vs. 17%), binge drinking (31% vs. 13%), thinking most people cannot be trusted (26% vs. 15%), a history of non-traffic related trouble with police (34% vs. 15%), and carrying a gun in the vehicle (23% vs. 15%). We also found evidence of reciprocity: drivers making obscene gestures were more likely to report that others have done the same to them (32% vs. 4%).

Conclusions: We find additional evidence that hostile driving behavior is associated with other risky behaviors that may compromise safety on the roadway (such as gun carrying) and off (such as being arrested for non-traffic related offenses). Additional research is needed to examine protective factors, such as trust in others, that may reduce the prevalence of these behaviors.

Learning Objectives: After this session, participants will be able to: List correlates of hostile driving behavior, discuss how various correlates might affect driving behavior (e.g. does the presence of multiple risk factors increase the likelihood of hostile driving behavior?), identify potential protective factors that may reduce the prevalence of hostile driving behavior.

The Epidemiology of Pedestrian Injury in a Suburban Setting, 1991-2000

Charles J DiMaggio, PhD, MPH

Columbia University, New York, NY

Background: As part of its goal to decrease the occurrence and severity of injury, the Nassau County, NY, Department of Health studied pedestrian injuries and fatalities. The aims were to describe pedestrian injury occurrence, fatality and hospitalization rates, and to map injury sites.

Methods: Local, state and national data sources were utilized to describe epidemiologic features and to calculate zip-code level hospitalization rates which were correlated to community socio-economic characteristics. A geographic information system to locate the occurrence of pedestrian fatalities was created.

Results: Between 1991 and 2000 there were 9,284 pedestrian injuries and 299 pedestrian deaths among the 1.3 million residents of Nassau County. Annual injury and fatality rates remained constant over the 10 year period. Pedestrian incidents accounted for 2% (9,248/461,955) of all traffic-related injuries, but were responsible for 27% (299/1,105) of all traffic-related deaths. The mean age of an injured pedestrian was 37, with a mode of 16. Most injuries occurred during daylight hours, but there was some evidence of an increased risk of fatality at night. 26% of pedestrians injured at intersections were crossing with the signal. There was a positive correlation between the proportion of black and Hispanic residents living in a community and the risk of hospitalization for pedestrian injury. A geographic information system identified sites of multiple pedestrian injuries and fatalities on county roads and helped inform injury control efforts.

Conclusion: This study resulted in increased attention to the issue of pedestrian injuries and more formal collaboration between public health, engineering and law enforcement agencies. Efforts to control pedestrian injuries can be enhanced by epidemiologic surveillance and study. Descriptive, temporal and spatial analyses can form the basis for site visits and possible interventions.

Learning Objectives: Describe the epidemiology of pedestrian injuries in a suburban community.Outline the use of multiple data sources and geographic information systems to conduct studies of pedestrian injuries. Discuss the process of collaboration across agencies when conducting injury control research.

Reaching a Community With the Booster Seat Message

Sallie Thoreson, MS[1] (Pres), B Bailey[1], M Gray[2]

[1]Colorado Department of Public Health and Environment, Denver, CO
[2]DRIVE SMART Colorado Springs, Colorado Springs, CO

Background/Objectives: We conducted a three-year community-wide booster seat promotion campaign targeting children ages 4-8 years in Colorado Springs, Colorado. We used a community booster seat observational survey as our outcome evaluation. The project concluded before the state booster seat law began.

Methods: A community campaign in 2000-2003 applied public health principles to increasing booster seat use. The Community Readiness model helped us design and monitor our message that booster seats are protective, affordable and acceptable to children. The campaign distributed booster seats at community and school events; aired radio messages; displayed billboards messages; and distributed brochures in English and Spanish. We used focus groups as formative evaluation and written surveys of parents and children for impact evaluation. Pre- and post- observational surveys in Colorado Springs and a control community of restraint use for 4-8 year olds were used to monitor the outcome of the campaign.

Results: Each survey had over 400 observations from at least 25 community sites. Observed booster seat use over three years in Colorado Springs increased from 11.0% to 44.3% compared to an increase of 2.5% to 12.5% in the control community. Both increases were statistically significant. Driver safety belt use in was strongly associated with restraint use of children. Booster seat use was highest among children riding in mini-vans and SUVs. Booster seat use was lower for children riding in pick-up trucks and sedans, for Hispanic children, in lower income areas, and for male drivers.

Conclusions: Booster seat use rates can be increased substantially even in the absence of a state booster seat law. An array of evaluation methods were essential to the project.

Learning Objectives:

1. Describe an effective community-based injury prevention program
2. Understand the individual and community factors related to increased booster seat use
3. Identify evaluation methods to use in community interventions

Observational Seat Belt Survey Protocol Development Project

Carolyn E Crump, PhD (Pres), JM Bowling, PhD, MM Cannon, MPH

University of North Carolina Department of Health Behavior and Health Education, Chapel Hill, NC

Background/Objectives: Motor vehicle crashes are the leading cause of death for American Indians/Alaska Natives (AI/AN) aged 5-44. Seat belt use reduces fatal/nonfatal motor vehicle crash injuries. Considerable variability exists in methods used to identify AI/AN seat belt use rates. Most programs calculate point estimates of use rates ignoring confidence intervals and the complex nature of data collection used in observational studies. This project describes the implications of ignoring complex survey design in the calculation of seat belt use rates and identifies a uniform means for local AI/AN communities to conduct seat belt surveillance.

Methods: Retrospectively, we surveyed 12 tribes to obtain information about observational data collection methods and seat belt use rates. SUDAAN analysis was used to estimate design effects resulting from the clustered approach for collecting observational survey data. Prospectively, 17 tribes assessed traffic flow and identified a sampling frame from which the number of clusters, sample size, and length of observation time required were identified. Sites conducted quarterly observational surveys at randomly selected locations. SAS-callable SUDAAN was used to calculate design effects (DEFF) and interclass correlations (roh).

Results: Design effects ranged from 2.2 to 31.9 (n=10,712 observations) in the retrospective phase and < 1 to 9.0 in the prospective phase (n= 23,771 observations Rounds I and II combined). The roh was .02 and .07 for drivers, and .04 and .03 for passengers for Rounds I and II respectively. Seat belt use varied considerably across sites for drivers (20%-77%) and passengers (19%-82%). Attrition was minimal.

Conclusions: Observation location selection procedures (e.g., random selection) are important and the implications of ignoring design effects could be substantial. Design effects decreased when sites used the standardized protocol. A final protocol will be developed and available for dissemination.

Learning Objectives: Describe the importance of developing an observational seat belt survey protocol specific to American Indian/Alaska Native communities. Discuss statistical methods used to analyze cluster design observational seat belt surveys. Identify the next steps for developing and disseminating this observational seat belt survey protocol.

National Violent Death Reporting System

Tuesday 10:15 - 11:45 AM

Injury Morbidity and Mortality Data Integration With Human Services Databases

Elizabeth H Corley, MA[1], Megan A Weis, MPH[2] (Pres), LP Carter, MS[2], JE Ferguson, DrPH[3]

[1]Office of Research and Statistics, SC Budget and Control Board, Columbia, SC; [2]Division of Injury and Violence Prevention, Columbia, SC [3]SC Department of Health and Environmental Control, Columbia, SC

Background/Objectives: As part of the South Carolina Violent Death Reporting System, the Division of Injury and Violence Prevention (DIVP), SC Department of Health and Environmental Control and the Office of Research and Statistics (ORS), SC Budget and Control Board created a unique partnership to statistically link health and human services databases to identify causal relationships and trends in intentional injury.

Methods: Software tools permit linking data from various sources and defining multi-dimensional aggregates of data (or "cubes") that permit analysis, layering and drill-down in a user-friendly mode through web-enabled secure sites. This technology allows planners and policy makers the ability with the click of the mouse to create tables and analyses that previously required costly analyst support and time.

Results: Using 3 years of data, violence information including demographics, socioeconomic status, and cause and severity of injury was linked to all-payer inpatient hospitalization, emergency room visit, ambulatory surgery, Vital Records death data, and Department of Mental Health client enrollment files. Measures created include: number of visits, patients, fatalities and total charges. Forty dimensions created include examining injuries by: Day of the Week, Season, Discharge Status, Race, Gender, Facility, NCHS E-Codes, Nature, Type and Cause of Injury, Patient County, and Zip. The created dimensions also include patient characteristics showing who had been a DMH patient or diagnosed with a Drug or Alcohol condition, Asthma, Epilepsy, Diabetes or Heart Disease. Other conditions that might predispose an individual to increased risk for injury are also incorporated. Access is from a secure web site using login information and certificate.

Conclusions: The data linkage provides previously unavailable access to violence analysis. Additional databases and unintentional injury information will be added.

Learning Objectives: Identify the necessary software and process to link databases. Describe the previously unavailable variables to be used in violence research and prevention. Outline characteristics of violence in South Carolina.

Female Homicide – Findings From the National Violent Death Reporting System

Malinda Steenkamp, MPhil, Dionne White, MPS (Pres)

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The National Violent Death Reporting System (NVDRS) collects detailed and timely information on violent deaths to provide high quality data useful for prevention of all types of violence.

Methods: NVDRS is a surveillance system that collects data on all violent deaths, including those due to homicide. The system is coordinated by the Centers for Disease Control and Prevention. Seventeen states are currently funded. States collect data from multiple data sources, including death certificates (DC), coroner/medical examiner (CME) files and law enforcement records. This abstract presents preliminary descriptive data on 417 female homicides from the first states funded in 2002.

Results: The data from the first six states funded included 417 female homicides for the data year 2003. These deaths made up 24% of all female violent deaths in NVDRS and yielded a crude annual death rate of 2.28 per 100,000 population. Based on DC data, 48% of female victims were classified as Black and 42% as White; 9% were considered to be of Hispanic origin. About 13% of victims were 17 years or younger. Twenty-three percent of victims were never married, 20% were married and 10% were either divorced or married but separated when they died. Five victims (1%) were pregnant at the time of death. Fifty one percent of victims died at home. Of the 215 cases where relevant information was available, 118 (55%) of the homicides were related to intimate partner violence.

Conclusions: NVDRS links data from different data sources and this improves our understanding of the circumstances leading to the female homicide. This information will help target interventions, as well as assist in developing and evaluating relevant policies and strategies.

Learning Objectives: At the conclusion of this presentation, the participant should be able to: Explain how NVDRS collects data on female deaths due to homicide. Describe preliminary findings on female homicides. Discuss how the National Violent Death Reporting System (NVDRS) contributes to our knowledge of female deaths due to homicide.

Two Heads Are Better Than One: An Interdisciplinary Approach to Incident-Based Violent Death Surveillance and Injury Prevention

Karen E Head, RN (Pres), V Powell, PhD

VA Department of Health, Office of The Chief Medical Examiner, Richmond, VA

Background: This paper uses data collected through the National Violent Death Reporting System (NVDRS) to (1) demonstrate the value of death event data in understanding the characteristics and dynamics of violent death events with multiple victims and (2) outline injury and violence prevention strategies for these deaths.

Methods: NVDRS is a powerful tool for violent death research, for three reasons. One, NVDRS establishes national definitions and coding regimes for violent death surveillance. Two, it includes analysis of death records from an interdisciplinary standpoint, including forensic pathology, law enforcement, toxicology and vital records. Three, NVDRS is supported with a relational database that permits event-specific linkages between and among victims, suspects, weapons and injury patterns.

Results: Analysis of 2003 violent death incidents for Virginia revealed that 39 of 1,286 incidents, three percent, involved more than one victim. Eighty-five deaths resulted from these violent encounters. Five kinds of multiple victim death events were identified: family/intimate partner conflicts, legal interventions, violent deaths in the context of other criminal activities, suicide pacts, and other arguments. Preliminary findings suggests both similarities and variations within this multiple victim death event typology with regard to socio-demographic characteristics of victims and suspects, relationships between and among victims and suspects, circumstances surrounding the fatal death events, and weapon and injury patterns.

Conclusion: The unique qualities and circumstances of these types of multiple victim fatal events will be provided, supporting the authors' claim that injury and violence prevention strategies must reflect those insights to be effective.

Learning Objectives: At the end of this session, the participants will be able to: Describe the characteristics of the National Violent Death Reporting System; Describe the dynamics of multiple-victim violent death events; and Describe the power of the National Violent Death Reporting System in identifying appropriate injury prevention strategies.

What a New Reporting System Tells Us About Violent Deaths

Malinda Steenkamp, MPhil (Pres), N Patel, MS(CS)

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The National Violent Death Reporting System (NVDRS) collects detailed, timely information on violent deaths to provide high quality data useful for violence prevention.

Methods: NVDRS is a population-based surveillance system that collects data on all violent deaths. The system is coordinated by the Centers for Disease Control and Prevention and 17 states are currently funded. States collect information from multiple data sources, including death certificates (DC) and coroner/medical examiner (CME) files. This paper presents preliminary descriptive data from six states.

Results: For the data year 2003, NVDRS included 7,418 violent deaths for the first six funded states. Based on DC data, 77% of cases were male; 69% were considered White, 26% Black and 1% Asian/Pacific Islander; 5% were of Hispanic origin; 6% were younger than 20 years and 40% were between 20 and 39 years. 3,452 cases (47%) were due to suicide, 1,980 (27%) to homicide and 1,875 (25%) were of undetermined intent. About 2% of deaths involved legal intervention or unintentional firearm deaths. CME data showed that, of the 2,809 suicides where circumstances were known, 40% had a mental health problem recorded; and 24% had some problem with an intimate partner noted. About 4% of the suicide victims were the perpetrator of intimate partner violence (IPV) in the month before death. Of the 816 homicides where circumstances were known, 22% of cases were associated with a crime (e.g., robbery, drug trade); 21% involved IPV; and less than 2% of cases were considered to be gang-related.

Conclusions: NVDRS links data from different data sources and improves our understanding of violent deaths to help target interventions, develop community-wide policies, evaluate strategies and channel funds.

Learning Objectives: At the conclusion of this presentation, the participant should be able to:
1. Explain how NVDRS collects data on violent deaths
2. Describe preliminary findings on homicides and suicides
3. Discuss how the National Violent Death Reporting System (NVDRS) contributes to our knowledge of violent deaths

Sports and Recreation Injury

Tuesday 1:45 - 3:15 AM

All-Terrain Vehicle-Related Injuries in West Virginia and the Implications for a Statewide Computer-Based Injury Surveillance System

James Helmkamp, PhD[1] (Pres), W Manley, RN[1], S Rockwell, RN[2], B Trent, RN[3], M Hensley, RN[4], J Sebring, MS[5], W Ramsey, MD[7], L Roberts, MD[6]

[1]West Virginia University Injury Control Research Center, Morgantown, WV; [2]WV Office of Emergency Medical Services; [3]Cabell-Huntington Hospital, Huntington, WV; [4]Charleston Area Medical Center, Charleston, WV; [5]Ohio Valley Medical Center, Wheeling, WV; [6]Jon Michael Moore Trauma Center, Morgantown, WV; [7]Office of Emergency Medical Services, Charleston, WV

Objectives: Describe victim characteristics and injuries resulting from all-terrain vehicle (ATV) crashes; identify limitations of current injury surveillance in West Virginia; and describe how newly mandated state-wide computer-based injury surveillance system will provide accurate and timely data.

Methods: We studied 395 victims treated at four of the state's largest trauma centers from June – December 2003. Incident demographics, patient characteristics, and available injury information were abstracted from medical records.

Results: Fifty-three percent of the crashes involved rollovers and 76% of the victims were male. Eighty-five percent of the victims were driving the ATV. Victims ranged in age from 3 to 85 with 23% below 18. Seventeen percent of the victims wore helmets. Elevated BAL was present in 28% of the victims. Mean Injury Severity Score (ISS) was 8.7, mean hospital length of stay for 228 admitted patients was 4.5 days, and mean overall medical charges were $11,148. Males experienced more intracranial injuries while females had more contusions and sprains. Helmets and position of victim on ATV did not influence ISS, but victims under the influence of alcohol had a significantly higher ISS (10.6) than others (7.9), $p<.005$.

Conclusions: Our study suggests that ATV use in West Virginia is dangerous and often results in serious and expensive injuries. Missing, inconsistent, and incomplete data across facilities suggest that the problem is likely worse. The inability to accurately count and describe ATV-related or other unintentional injuries and link with other medical

centers has validated the need for and development of the computer-based Trauma and Emergency Medical Information System (TEMIS). Descriptive injury data derived from TEMIS will be useful in developing intervention strategies for public health officials and for lawmakers considering policy change. Linkages could be established with similar systems in other states or to a national database such as the National Trauma Data Bank, which could be the foundation of a functional national injury surveillance network.

Community Approaches to Pediatric All-Terrain Vehicle Injury

Mary E Aitken, MD[1] (Pres), SH Mullins[1], BM Miller[1], JB Killingsworth[1], DM Parnell[2], CJ Graham, MD[1], RM Dick, MD[1]

[1]University of Arkansas College of Medicine Department of Pediatrics, Little Rock, AR; [2]Arkansas Children's Hospital, Little Rock, AR

Background: All-terrain vehicles (ATVs) are associated with substantial risk of injury for children. Policies adopted by public health organizations have discouraged use of ATVs for children <16 years and have promoted use of motorcycle helmets, protective clothing, and other safety behaviors to reduce injuries for all users. Despite this, ATV use by children continues and serious injuries are common. We developed a community-based ATV injury prevention program targeting rural youth, utilizing user input to identify creative strategies and engage high risk communities.

Methods: A multidisciplinary workgroup including representatives from public health, insurance companies, state game and fish agencies, and the ATV industry assembled to review state data and policies. An analysis of potential intervention strategies was undertaken using injury control methodology. Focus groups of ATV users and retailers were held to frame educational messages and refine potential interventions.

Results: Focus group input about effective safety themes was combined with data demonstrating injury risk factors to design the program. The resulting campaign will include coalition development through existing community health networks, education in a variety of settings, and a media campaign with unique outlets tailored for rural areas with limited television markets, including movie theatres, school-based closed circuit television, radio, and print media. Measurement tools designed to gauge changes in ATV use and knowledge will be refined using community input. Acceptability of educational messaging in different areas will be formally assessed and used to improve the program.

Conclusions: A community campaign targeting prevention of pediatric ATV injury was developed using input from multiple stakeholders. Grounded in a multidisciplinary injury control approach, the program will be evaluated using rigorous measures of change in knowledge and safety behavior.

Injury Patterns and Safety Practices of Rock Climbers

Erik M Gerdes, MD[1] (Pres), JW Hafner, MD[1], JC Aldag, PhD[2]

[1]OSF Saint Francis Medical Center, Peoria, IL
[2]University of Illinois College of Medicine, Peoria, IL

Objectives: Rock climbing is rapidly gaining popularity. The injury patterns and safety practices of climbers have not been well described. This study seeks to identify the general injury patterns and safety practices associated with climbing.

Methods: An anonymous survey was posted on several climbing websites. Data was collected autonomously for 2 months. Demographic data was obtained and subjects identified their 3 most significant injuries. Participants were also surveyed regarding safety practices. SPSS 12.0 was used for statistical analysis. Variables were tested with Chi-square, Mann-Whitney U, Student t-tests, and Spearman Rhos with $p<0.05$ as significant.

Results: A total of 2,472 injuries were reported by 1,887 subjects. The mean number of injuries reported was 2.3 (SE 0.14) and 17.9% reported no injuries. Fingers, ankles, elbows, and shoulders were most commonly injured. Sprains and overuse injuries were the most common. Many climbers took at least a few weeks off after their injury. Approximately half of the injuries took place outdoors. Some (28%) reported that they had climbed under the influence of drugs or alcohol and these climbers were found to have more injuries ($p<.008$). Most of the injuries (77%) occurred climbing at or below subject's normal climbing level. More injuries were seen in climbers who participate in traditional climbing ($p<0.001$) or solo climbing ($p<0.001$). Males were found to have less helmet use ($p=0.019$) and more substance use ($p<0.001$).

Conclusions: Sprains and overuse injuries were the most common injuries among rock climbers, with the upper extremity being the most frequently injured body part. Climbers that participate in traditional or solo climbing and those who have climbed under the influence of drugs or alcohol, were found to experience more injuries.

Learning Objectives: Describe the body part distribution of climbing injuries. Describe the types of injuries seen in rock climbers. Understand the safety practices used by rock climbers.

Nonfatal Skiing and Snowboarding-Related Injuries in the United States

Huiyun Xiang, MD, PhD (Pres), K Kelleher, MD, MPH, BJ Shields, MS, KW Brown, PhD, GA Smith, MD, DrPH

Center for Injury Research and Policy, Columbus Children's Research Institute, Columbus, OH

Background: This study aims to describe the characteristics of skiing- and snowboarding-related injuries treated in U.S. emergency departments (EDs).

Methods: Skiing- and snowboarding-related injuries collected by the National Electronic Injury Surveillance System in 2002 were analyzed. Data regarding skiing and snowboarding participation were used to calculate injury rates by age group and activity (skiing versus snowboarding).

Results: An estimated 77,300 (95% CI=11,600 – 143,000) skiing- and 62,000 (95% CI= 32,800 – 91,200) snowboarding-related injuries were treated in U.S. hospital EDs in 2002. Wrist injuries (17.9%) and arm injuries (16.6%) among snowboarders and knee injuries (22.7%) among skiers were the most common injuries. The age groups that have the highest skiing-related injury rates were the 55-65 years (29.0 per 1,000 participants), the 65+ years (21.7 per 1,000 participants), and the 45-54 years (15.5 per 1,000 participants). The age groups that have the highest snowboarding-related injuries were the 10-13 years (15.9 per 1,000 participants), the 14-17 years (15.0 per 1,000 participants), and the 18-24 years (13.5 per 1,000 participants). Traumatic brain injury (TBI) rates were higher among older skiers, 55-64 years (2.15 per 1,000 participants), and younger skiers, 10-13 years (1.69 per 1,000 participants).

Conclusions: Our study is the first to demonstrate that older skiers are at highest risk for injury. Adolescents are at highest risk for snowboarding-related injury. Prevention of TBI should be a top injury control priority among skiers and snowboarders.

Learning Objectives: Describe the national estimates and characteristics of nonfatal skiing- and snowboarding related injuries in the U.S. Decide why the appropriate denominators are very important in injury research. Learn updated information about skiing helmets.

Strategic Planning to Reduce All-Terrain Vehicle Injuries Among Alaskan Youth

Martha A Moore, MS

Alaska Department of Health and Social Services, Juneau, AK

Background/Objectives: All-terrain vehicle (ATV) injury is a major cause of injury hospitalization for Alaska's youth, and rates are increasing. The purpose of this presentation is to describe the methods and results of a pilot planning session that integrated data and resources to develop recommendations for reducing ATV injuries among Alaskans age 14 and under.

Methods: Key injury prevention partners were invited to attend a planning session to review ATV injury data and develop prevention strategies using "Force Field Analysis" and the "Intervention Decision Matrix".

Results: An analysis of 270 ATV injuries from 1991-2000 identified the high-risk regions of the state for injury, the most common mechanisms of injuries, and increased risk of serious head injury for riders without protective helmets. Despite a national ban on the manufacture of three-wheeler ATVs since 1988, 22% of the ATV injury events involved three-wheelers. Intervention recommendations included: review of ATV legislation and assistance to communities to implement local policy on helmet use; promotion of helmet use through role modeling; ATV safety courses; public service announcements; use of victim advocacy; funding to provide helmets at lower costs in communities; and, the use of governors for controlling ATV speed.

Conclusions: The strategic planning process proved successful. Force field analysis and the intervention decision matrix were effective tools in assessing effectiveness, feasibility and acceptability of interventions. The inclusive and representative quality of the session brought a variety of approaches to the table and culminated in consensus on injury prevention interventions to address an important public health issue. This exercise provided an excellent model for further injury prevention planning activities.

Learning Objectives: Participants will be able to define force field analysis and its purpose. Participants will be able to name three criteria of the intervention decision tree. Participants will be able to name three critical components for injury prevention planning.

What Proportion of Sports-Related Injuries Can Be Attributed to Foul Play?

R Dawn Comstock, PhD (Pres)

Center for Injury Research and Policy, Columbus Children's Research Institute, The Ohio State University, Columbus, OH

Background/Objectives: Illegal activity/foul play has not been studied as a risk factor for injury among United States collegiate athletes. The objective was to compare sport and gender differences in injury rates and proportions of injuries attributed to illegal activity using National Collegiate Athletic Association (NCAA) Injury Surveillance System (ISS) data.

Methods: NCAA ISS data from 2001-2003 were analyzed for men's basketball, football, ice hockey, lacrosse, soccer, and wrestling and women's basketball, field hockey, ice hockey, lacrosse, and soccer. Aggregate injuries and athletic exposures were used to calculate injury rates/1,000 exposures and proportions of injuries attributed to illegal activity.

Results: Football and wrestling had the highest injury rates, women's field hockey, basketball, and lacrosse the lowest. In sports both genders played men had higher injury rates. Gender differences were significant for ice hockey (RR=1.40, 95% CI 1.21-1.62), lacrosse (RR=1.38, 95% CI 1.21-1.58), and soccer (RR=1.16, 95% CI 1.08-1.24). Women's lacrosse, field hockey, and ice hockey had the highest proportion of injuries attributed to illegal activity, wrestling and football the lowest. While women's ice hockey (RR=1.59, 95% CI 1.09-2.33) and lacrosse (RR=2.14, 95% CI 1.48-3.09) attributed higher proportions of injuries to illegal activity than their male counterpart, the reverse occurred for men's compared to women's soccer (RR=1.60, 95% CI 1.30-1.98).

Conclusions: Illegal activity/foul play is an overlooked risk factor for sports-related injury. Reducing illegal activity/foul play through enhanced enforcement of sports' rules and targeted education about the dangers of illegal activity/foul play for players, coaches, and referees may reduce sports-related injuries. Future research is needed to further investigate identified sport and gender differences in the prevalence of illegal activity and its impact on sports-related injuries.

Learning Objectives: Identify illegal activity/foul play as an overlooked risk factor for sports-related injury. Describe gender and sports specific differences in illegal activity/foul play. List two potential methods for reducing illegal activity/foul play.

Suicide

Monday 4:45 - 6:15 PM

An Outcome Evaluation of the SOS Suicide Prevention Program

Moira A McDade, MSW, MPH[1] (Pres), RH Aseltine, PhD[2], R DeMartino, MD[3]

[1]Screening for Mental Health, Inc., Wellesley Hills, MA
[2]University of Connecticut, Farmington, CT; [3]Substance Abuse and Mental Health Services Administration, Rockville, MD

Background/Objectives: Suicide is the third leading cause of death among young people, ages 15 to 24 years, according to the National Center for Health Statistics. A number of diverse approaches to suicide prevention have been incorporated into high school curricula in the past 15 years, but few have been subjected to rigorous scientific evaluation. The Signs of Suicide (SOS) program is unique in that it incorporates two prominent prevention strategies, education and screening, into a single program. It teaches students that suicide can be prevented when specific action steps are taken to respond to signs of depression and suicide. Students learn how to identify these signs both in themselves and in others.

In the 2001-2002 school year, we evaluated the SOS program for its effectiveness in reducing suicidal behavior in a racially mixed, and economically diverse, group of secondary school students.

Methods: Students (N=2100) in 5 high schools in Columbus, GA and Hartford, CT were randomly assigned to intervention and control groups. The intervention group viewed an educational video, self-screened for depression and suicide, and received resources for follow-up assistance. Both groups completed self-administered questionnaires 3 months after program implementation yielding data for multivariate analysis.

Results: Significantly lower rates of self-reported suicide attempts (40% decrease) and greater knowledge (10% increase) and more adaptive attitudes about depression and suicide (3% increase) were observed among students in the intervention group.

Conclusions: The SOS program is the first school-based suicide prevention program to demonstrate significant reductions in self-reported suicide attempts. It's success lies in its ease of implementation, cost effectiveness, and developmentally appropriate use of peer intervention strategies.

Learning Objectives: List 3 reasons why the SOS program has had the success of being the first school-based suicide prevention program to demonstrate significant reductions in self-reported suicide attempts. Describe why the SOS program is uniquely different as compared to other suicide prevention programs available to the nation's high schools. Explain why it is important to introduce suicide screening and education programs into high school curricula.

Belief in the Inevitability of Suicide: Results From a National Survey

Matthew Miller, MD, MPH, ScD (Pres), D Azrael, PhD, D Hemenway, PhD

Harvard School of Public Health, Boston, MA

Background: The Golden Gate Bridge is the world's leading suicide location. Since opening in 1937 more than 1,200 others have leaped to their death over the same 4-foot railing that remains an original architectural detail of the bridge's footpath. Efforts to erect suicide barrier at the Golden Gate Bridge have been stymied for decades, ostensibly on the basis of aesthetics and cost and on the implicit assumption that all jumpers, if prevented from jumping, would find other equally lethal places from which to jump or other equally lethal suicidal methods, such as a firearms. To our knowledge, our study is the first to examine public opinion about the effectiveness of means restriction as an effective approach to preventing suicide.

Methods: A nationally representative sample of US adults were asked to estimate how many of the more than 1,000 people who committed suicide by jumping from the Golden Gate Bridge would have found another way to commit suicide if the Golden Gate Bridge had a barrier that prevented jumping. We identify demographic and behavioral characteristics associated with the belief that such an approach to preventing suicide would be completely ineffective.

Results: Thirty-four percent believed that a suicide barrier would not save a single life. The strongest predictor of belief in complete substitution was firearm ownership.

Conclusion: Belief in the inevitability of suicide may be a political impediment to adopting potentially effective suicide prevention efforts.

Learning Objectives: Describe the predictors of belief in the inevitability of suicide. Identify this belief as a barrier to potentially effective suicide prevention strategies.

Evaluating a Comprehensive School-Based Youth Suicide Program: Design, Challenges, and Interim Findings

Mary Madden, PhD (Pres)

University of Maine, Orono, ME

Background/Objectives: The Maine Youth Suicide Prevention Program received a three-year injury prevention grant from the Centers for Disease Control and Prevention to implement and evaluate a comprehensive approach to youth suicide prevention, intervention, and postvention in 12 Maine High Schools. The program is in year two. This presentation will describe the evaluation design, data collection methods, and the interim findings.

Methods: This mixed-method design utilizes interviews, document analysis, school coordinator journals, staff surveys, data collection forms designed to provide information on the identification and follow through with students potentially at risk for suicide, and student surveys for those participating in prevention curricula.

Results: At the end of year one of program implementation, data teachers are the most frequent individuals to initially express concern. Verbal and written statements are the most often cited sign prompting concern. Implementation challenges range from schools' preoccupation with No Child Left Behind requirements to navigating the process for developing or enhancing school protocols and policies related to suicide prevention, intervention, and postvention. A key benefit for schools is an enhanced, systematic response to students at risk. Evaluation challenges include data collection from schools, sharing of data between school personnel, and evaluation of the implementation of research-based curriculum.

Conclusions: Thus far, findings highlight the importance of a comprehensive approach that includes the development of policies, staff training, and student education. Ongoing technical assistance provided to school personnel appears to be a critical factor in supporting the implementation of this initiative in schools.

Learning Objectives: Gain knowledge about the design of one youth suicide prevention and intervention initiative, identify the challenges in evaluating a comprehensive school-based youth suicide program, describe the interim findings of a youth suicide prevention and intervention initiative.

Factors Predictive of Multiple Hospitalized Suicide Attempts

Chun-Lo (Katie) Meng, PhD (Pres), HB Hedegaard, MD, MSPH

Colorado Department of Public Health and Environment, Denver, CO

Background/Objectives: In 2000, Colorado had the eighth highest suicide rate in the nation (15 per 100,000). Although the demographic characteristics of attempters are different than those of suicide deaths, a significant risk factor for suicide death is a previous attempt. We created a logistic regression model to identify characteristics of individuals at increased risk for a second attempt.

Methods: Electronic files of discharge data from 1998-2003 were used to identify hospitalized suicide attempts, using ICD-9-CM codes E950-E958. 15,927 HDD records, representing 14,339 individuals, were identified. Excluding 288 individuals who died during the first hospitalization resulted in 12,796 individuals with a single suicide attempt hospitalization and 1,255 with multiple attempt hospitalizations.

Results: Compared to single attempters, a significantly higher percent of multiple attempters: were age 35-44 (32% vs. 23%); were non-metro Denver residents (37% vs. 31%); had Medicare/Medicaid as the expected payment source (23% vs. 16%); were hospitalized for 5+ days (19% vs. 14%); used cutting as the attempt method (19% vs. 13%); and were diagnosed with psychosis or other mental health disorders (92% vs. 87%). We used the results of this univariate analysis to develop a logistic regression model to identify individuals at risk for a second attempt within one year. The model indicates that individuals age 35-44 or with Medicare/Medicaid as the expected payment source or diagnosed with psychosis/ other mental health disorders were nearly twice as likely as the reference group to have a second hospitalized attempt within one year.

Conclusions: The results of this logistic regression model indicate that a subpopulation of hospitalized suicide attempters may be at higher risk for a second hospitalized attempt. Focused prevention efforts directed at this population might result in decreased suicide deaths.

Learning Objectives: Learn the demographic characteristics of suicide attempters vs. suicide deaths. Identify a subpopulation of suicide attempters that have an increased risk of a second suicide attempt within one year Identify focused prevention strategies.

Predicting Suicide Rates Using State-Level Ecological Models: Implications for Prevention

Lynne Fullerton-Gleason, PhD[1,2] (Pres), J Personius[3], J LaValley[1], G Thomas Shires[2]

[1]Department of Emergency Medicine, University of New Mexico, Albuquerque, NM; [2]Trauma Institute, University of Nevada School of Medicine, Las Vegas, NV; [3]Nevada Institute for Children at the University of Nevada in Las Vegas, NV

Background/Objectives: U.S. suicide deaths disproportionately involve non-Hispanic white males. Risk factors identified to date reflect this imbalance. This study examined risk factors related to state suicide death rates in the U.S. by age, race/ethnicity, mechanism, and sex.

Methods: State-level data were collected for variables hypothesized to be related to suicide, including income, population density, other injury rates, household firearms, legalized gambling, and measures of alcohol/drug use. Bivariate and multivariate regression modeling was used to identify factors related to suicide.

Results: Factors related to suicide, and models' explanatory ability, varied considerably between groups. For example, in bivariate analyses, unintentional injury death rates correlated positively with suicide rates among all age groups, but explained more of the variance in adults (age 25-64 years) (Rsq=43.6%) and youth (age<25 years) (Rsq=36.0%) than among seniors (age=65+ years) (Rsq=24.4%). Percentage of households with firearms was strongly correlated with suicide rates for all groups in bivariate analyses, but did not remain in any of the multivariate models. A measure of income disparity, the Gini coefficient, was a factor in multivariate models of youth suicides, and American Indian/Alaska Native suicides, but not other groups. Measures of drug/alcohol use modeled firearm suicides, but not suicide by other mechanisms. Ecological models explained more of the variance suicide rates among youth (Rsq=84.0%) than adults (Rsq=69.0%) or seniors (Rsq=57.6%), and explained American Indian/Alaska Native rates (Rsq=70.2) better than Hispanic rates (Rsq=34.2).

Conclusions: Ecological models based on state suicide rates effectively predict suicide in many groups. Suicide risk factors vary both in type and magnitude by age, sex, and race/ ethnicity. These differences should inform suicide prevention initiatives that focus on specific groups.

Learning Objectives: Understand how to interpret results of an ecological study, and the implications of bivariate and multivariate modeling. Identify factors related to suicide by age, race/ethnicity, and sex. Discuss the implications of differences in models' R-squared values with respect to suicide prevention.

The Black-White Suicide Paradox: Correcting Rates for Relative Underenumeration

Ian RH Rockett, PhD, MPH[1] (Pres), JB Samora, MPH[1], JH Coben, MD[1], GS Smith, MD, MPH[2]

[1]West Virginia University School of Medicine, Morgantown, WV
[2]Liberty Mutual Research Institute for Safety, Hopkinton, MA

Background/Objectives: Socioeconomic and epidemiologic indicators predict that United States' blacks have a higher suicide rate than whites. Yet for the period 1999-2001, both black crude and age-adjusted suicide rates were less than half those of whites. This research evaluates whether this racial suicide gap is artifactual. Applying alternative assumptions about suicide misclassification, we derived national suicide rates corrected for relative underenumeration.

Methods: Accessed through CDC Wonder, the data source is the Compressed Mortality File. Estimates of the sensitivity of suicide certification were computed by race, age and sex. They were based on mortality categories that suicidologists regard as most prone to concealing suicides: unintentional drowning, unintentional poisoning, undetermined injury intent, and unknown causes. Official suicide rates were corrected for relative underenumeration in light of differential sensitivity of certification. Specificity of suicide certification was assumed to be 100% for both races.

Results: Suicide certification was 66% more sensitive for white than black males and more than twice as sensitive for white as black females. For males, correction markedly shrank the official rate differentials beyond ages 20-24 years. Rate crossover occurred at ages 45-64 years. For females, rate correction generated convergence over much of the age spectrum, with marginal rate crossovers emerging at ages 45-54 and 75-84.

Conclusions: This research suggests that reported age and sex-specific suicide rate differentials between blacks and whites are largely artifactual. High-quality suicide data are essential for risk group delineation, risk factor identification, and program planning and evaluation. Measures that would improve data quality include extension of continuity of medical care to the poor, achievement of uniformly higher autopsy rates across states, and routine psychological autopsies for equivocal suicides.

Learning Objectives: To compute sensitivity estimates of suicide certification under alternative assumptions of misclassification. To correct official suicide rates for relative underenumeration. To systematically evaluate suicide data from a comparative perspective.

Surveillance

Tuesday 8:30 - 10:00 AM

Comparison of Paper, Oral, and Electronic Administration of a Lifestyle Questionnaire to Injured Patients

Cindy Goss, MA[1] (Pres), A Graham, MD[2], D Magid, MD, MPH[2], S Xu, PhD[2], C DiGuiseppi, MD, MPH, PhD[1]

[1]University of Colorado Health Sciences Center, Denver, CO
[2]Kaiser Permanente Health Plan of Colorado, Denver, CO

Background/Objectives: Brief interventions for injured patients are effective in reducing subsequent injury risk. The survey format used to screen injured patients may affect self-report of problem drinking and interest in treatment to prevent alcohol-related injuries. We compared three questionnaire formats for identifying problem drinking, and eliciting willingness to participate in a hypothetical lifestyle intervention trial, among injured patients.

Methods: We conducted a controlled trial among acutely injured adult patients seen in urgent care clinics, assigning formats systematically to clinics in one-week blocks. Patients who agreed to research assistant (RA) contact were recruited in clinic waiting areas. A brief questionnaire was completed by the patient in a paper or electronic format, or administered verbally by the RA using response showcards. Outcomes included identification of problem drinking (defined by AUDIT-C scores ≥ 4 and ≥ 6) and patient willingness to participate in a future (hypothetical) lifestyle intervention trial. We analyzed differences between formats with nonlinear mixed models, controlling for facility, age, and sex, using Generalized Estimating Equations.

Results: Among 370 injured participants, all formats were similarly effective in identifying problem drinking (AUDIT-C ≥ 4). The electronic format was significantly more likely than paper [1.96(1.10,3.48)] to identify problem drinking with an AUDIT-C ≥ 6. The oral [OR(95%CI)=1.66(1.22,2.26)] and electronic [1.59(1.23,2.07)] formats were significantly more likely than paper to elicit willingness to participate in a hypothetical lifestyle intervention trial.

Conclusions: The superiority of electronic and oral formats over paper format in eliciting willingness to participate in a hypothetical lifestyle intervention trial, and of the electronic format in identifying more severe problem drinking, could inform the development of screening questionnaires for brief intervention trials or programs among acutely-injured problem drinkers.

Learning Objectives: Compare oral, electronic, and paper questionnaire formats in terms of their effectiveness in screening acutely injured patients in urgent care clinics. Compare oral, electronic, and paper questionnaire formats in terms of their effectiveness in eliciting willingness to participate in a hypothetical lifestyle intervention trial. Describe levers and barriers to administering oral versus electronic versus paper questionnaire formats to injured patients.

From E to VWXY Cause of Injury Codes

David Lawrence, MPH[1] (Pres), N Patel, MSPH[2], M Shepherd, PhD[3]

[1]Children's Safety Network, San Diego, CA; [2]Children's Safety Network, San Diego, CA; [3]Children's Safety Network, Calverton, MD

Background: From 1979-1998, injury deaths were coded and classified using the ninth revision of the International Classification of Diseases (ICD-9). In 1999, the tenth revision of the ICD (ICD-10) was implemented in the U.S for coding deaths. Subsequently, once familiar E codes were replaced with V, W, X, and Y codes along with *U codes for terrorism-related deaths. The transition in ICD revisions prompted questions about how to interpret injury mortality statistics given the differences in coding injury-related deaths and specific changes to injury categories.

Methods: The Children's Safety Network in consultation with the National Center for Health Statistics developed a series of fact sheets to disseminate information on the most current changes in the coding and classification of injury mortality data. Although scattered information about these changes is available either online or in various publications, these fact sheets provide a single source of definitions and explanations regarding the changes and the impact they have on reporting injury deaths. **Results:** The fact sheets should assist agencies that monitor the occurrence of injury-related deaths in their jurisdiction. Implications for trend analyses, the appropriate use of comparability ratios, importance of multiple causes of injury death codes, the injury mortality framework, and other issues are discussed.

Conclusions: Information on the cause and intent of an injury is essential for designing an effective injury prevention program. Injury prevention researchers need and rely upon cause-coded data. Understanding that there are significant differences in how data is coded and classified under ICD-10 is crucial for continuation of accurate and timely reporting and interpretation of injury mortality statistics.

Learning Objectives: Describe the most current changes in the coding and classification of injury deaths under the Tenth Revision of the International Classification of Diseases (ICD-10).Discuss how the changes in coding and classification of injury deaths impact work in the field of injury prevention. Provide options on how to proceed with presenting and interpreting injury mortality data given the changes in coding and classification of cause of injury death codes.

Injury and Poisoning Estimates From the National Health Interview Survey – Why They Differ From Other Estimates

Manon A Boudreault, MPH[1] (Pres), M Warner, PhD[2], LA Fingerhut, MA[3]

[1,2,3]Centers for Disease Control and Prevention, National Center for Health Statistics, Hyattsville, MD

Background: The National Health Interview Survey (NHIS) provides national estimates of medically-treated nonfatal injury and poisoning episodes for the civilian noninstitutionalized U.S. population. Current estimates from the NHIS based on self-reported data collected in the household are lower than from other surveys based on administrative data.

Methods: Data collected in the NHIS are compared to other national estimates. Results from the critical review of the instrument involving cognitive interviewing, data analysis, and feedback from interviewers and data users will facilitate the interpretation of the comparisons.

Results: Between 1997- 2003, NHIS estimates of injury and poisoning ranged from 34 to 24 million medically-treated injury and poisoning episodes. From another section of the 2003 NHIS, 11 million adults were estimated to have had some difficulty with functional activities due to an injury. Some of these are not counted in the annual injury episodes. Additionally, relatively few respondents to the NHIS injury episode section of the survey describe their injuries as intentional compared to estimates from the National Hospital Ambulatory Medical Care Survey where in 2002, an estimated 2 million emergency department visits were for intentional injuries.

Conclusion: The injury episodes in the NHIS may be underestimated by some portion of the 11 million who reported a limitation due to injury and by intentional injuries not reported in the NHIS. Differences are explained in part by recall, respondent comfort with a federal survey, and most importantly by the nature of the survey: in-house versus medical record. Recommendations based on the review were included in the 2004 survey, results of which are not yet released. Additional analysis is ongoing.

Learning Objectives: Identify the various CDC/NCHS surveys that collect injury and poisoning data. Identify at least two reasons why estimates between these surveys may differ. Understand the history and planned changes for the NHIS.

Injury Deaths of U.S. Citizens Abroad

Clare E Guse, MS[1] (Pres), LM Cortes, MHS[2], SW Hargarten, MD, MPH[3], HM Hennes, MD, MS[4]

[1]Department of Family & Community Medicine and Injury Research Center, Medical College of Wisconsin, Milwaukee, WI; [2]Center for Youth Violence Prevention, University of Puerto Rico, San Juan, Puerto Rico and Injury Research Center, Medical College of Wisconsin, Milwaukee, WI; [3]Department of Emergency Medicine and Injury Research Center, Medical College of Wisconsin, Milwaukee, WI; [4]Department of Pediatrics, Emergency Medicine Section, Medical College of Wisconsin, Milwaukee, WI

Background/Objectives: To describe the frequency and types of intentional and unintentional injury deaths of U.S. citizens abroad.

Methods: We examined U.S. State Department death reports of U.S. citizens abroad for the years 1996, 1998, 2000, and 2002. Reports were abstracted manually, categorized by cause of death and entered into a database. Injury categories included motor vehicle crash (MVC), violent (suicide or homicide), trauma-mechanism unknown, drowning, poison, asphyxia, air transport, fire, fall, and environmental. Regional definitions followed those of the Office of Travel and Tourism Industries. Proportional mortality ratios (PMR) were calculated, using deaths in the U.S. as the comparison.

Results: During the four years, 2,556 injury deaths were recorded, 15% of all deaths. MVCs and trauma-mechanism unknown each accounted for 21% of the injury deaths; 17% were violent deaths, 14% were by drowning. The estimated PMR for injury fatalities of citizens abroad was 2.1 (95% confidence interval (CI) 2.0 - 2.2). Drowning deaths occurred at a higher rate in the Caribbean (PMR=47.4; 95% CI 36.8-61.0) and Central America (PMR=34.6; 95% CI 25.9-46.4). MVC rates were higher in Africa (PMR=8.0; 95% CI 5.8-10.9) and Mexico (PMR=4.2; 95% CI 3.5-4.9), while violent deaths occurred at a higher rate in Africa (PMR=4.2; 95% CI 2.7-6.4).

Conclusions: The PMR indicates an excess of injury deaths for citizens abroad. Regional variations in types of injury deaths are likely due to the common tourist activities in those destinations. More accurate data on injury deaths and the number of U.S. citizens abroad are needed to better delineate the scope and risk of the problem and prevent travel related mortality.

Learning Objectives: Understand the scope of U.S. citizen injury deaths occurring abroad. Understand the regional differences for U.S. citizens in types of injury deaths. Begin targeting prevention strategies where most needed.

Intent and Causes of Injury Mortality in a Large Urban Region: How Do Rates Vary by Age and in Comparison to the United States?

Gwendolyn Bergen, MPH, MS[1] (Pres), AC Gielen, ScD[2], ScM, T Serpi, MS[3]

[1,2]Center for Injury Research and Policy Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; [3]Maryland Department of Health and Mental Hygiene, Baltimore, MD

Background/Objectives: Injury data are readily available at a national and state level, but not for specific urban areas. Urbanization has been associated with increased homicide death rates, and decreased unintentional injury death rates as compared to other geographical areas in the United States. By examining differences between overall United States injury rates and rates for a specific urban area, injury prevention efforts at both the national and local levels can be improved by understanding what underlying causes account for the differences in mortality rates. This study was conducted to examine injury mortality in the metropolitan area of Baltimore, Maryland. The objectives of this study are to describe injury mortality in Baltimore City, and the Baltimore suburbs, and to compare them to that of the United States.

Methods: Injury death data by intent and age were obtained from the Maryland Department of Health and Mental Hygiene for Baltimore City and the Baltimore suburbs, and from WISQARS for the United States. Both overall and age-group injury death rates with confidence intervals were calculated separately for Baltimore City, the Baltimore suburbs, and the United States for each intent of injury death, and for the five leading causes of injury death. Injury death rates were compared to determine where significant differences between Baltimore City, the Baltimore suburbs, and the United States existed.

Results: The total injury death rate for Baltimore City of 141.4 deaths/100,000 population was significantly higher than both the United States rate of 52.9 deaths/100,000 population, and the Baltimore suburbs rate of 51.7 deaths/100,000 population. Baltimore City had a significantly higher homicide death rate compared to the United States while both Baltimore City and the Baltimore suburbs had significantly higher undetermined injury death rates. Although there were no differences in overall unintentional injury death rates, both Baltimore City and the Baltimore suburbs had significantly higher unintentional injury death rates in the elderly. The leading causes of injury death differed with poisoning being the leading cause of injury death for Baltimore City and the Baltimore suburbs as opposed to motor vehicle traffic for the United States. Baltimore City had significantly higher poisoning, firearm, and suffocation injury deaths as compared to the United States.

Conclusions: We conclude that more research is needed, in Baltimore City on homicide, unintentional injury deaths in the elderly, poisoning, firearms, and suffocation, and in the Baltimore suburbs on unintentional injury deaths and suffocation in the elderly, and the lower motor vehicle traffic death rates in certain age groups to understand the risk and protective factors that influence these rates. In both areas, research should focus on undetermined intent injury deaths to determine why this type of death is so high in the Baltimore area. This study illustrates the interesting and useful information that can be obtained from surveillance of injuries, but the large proportion of undetermined deaths highlights the critical need for better surveillance systems.

Learning Objectives: Understand the epidemiology of injury deaths in the Baltimore metropolitan area. Understand how the intents and causes of injury death in a metropolitan area compare to those for the United States. Highlight potential areas for further research into the underlying factors behind different intents and causes of injury deaths.

Pregnancy-Associated Emergency Department Injury Visits Using Probabilistic Linkage of Statewide Birth and Fetal Death Data

Harold B Weiss, MPH, PhD[1] (Pres), LJ Cook, MStat[2]

[1]Center for Injury Research and Control, University of Pittsburgh, Pittsburgh, PA; [2]The Intermountain Injury Control Research Center, University of Utah, Salt Lake City, UT

Background/Objectives: There are no published population-based studies of the epidemiology of pregnancy-associated emergency department (ED) injury visits. The only related report was an outpatient (clinic and ED) study published over 40 years ago among women enrolled in an HMO, reporting that 7% (214/3072) of women experienced one or more medical visits for injury during pregnancy.

Methods: Statewide Utah ED, birth, and fetal death records from 1997-2001 were probabilistically linked to identify women seen in a hospital ED with an injury during pregnancy. This presentation focuses on the incidence, demographics and variations by mechanism, intent and nature of injury among the mothers.

Results: Of 226,179 live births and fetal deaths during this period, 8,279 (3.7%) involved an ED injury visit during the pregnancy. Among leading mechanisms, motor vehicle occupant injuries accounted for 1,842 visits (22%), falls 1,427 (17%), cutting and piercing 834 (10%), struck by/against 834 (10%), overexertion 633 (8%), and poisonings 237 (3%). Among the injuries with known intent, 92% were unintentional, 7% assaults, and 1% self-inflicted. The leading nature of injury were fractures, dislocations, sprains, and strains (34%), superficial, contusion and crushing injuries (24%) and open wounds (16%). The estimated rate (in person-years) of ED injury visits for pregnant women was lower compared to all women of reproductive age (rate-ratio = 0.60).

Conclusions: Probabilistic linkage is a useful and efficient method for combining databases to study injury during pregnancy. About 1% of all births are involved in a motor vehicle crash resulting in an ED visit. Future analyses will assess the risk of adverse birth outcomes related to maternal injury such as fetal death, low birth weight, birth complications and abnormal newborn conditions.

Learning Objectives: Describe the unique advantages of using probabilistic linkage to identify and estimate injury risk in a vital but understudied population. Identify the leading mechanisms, intent and diagnoses groups for pregnancy-associated emergency department injury visits to help guide future research and prevention efforts. Understand how data gathering methods and targets reflect our understanding of injury risks in this special population.

Surveillance

Tuesday 10:15 - 11:45 AM

Data Systems Under Development at the National Center for Statistics and Analysis (NCSA)

Joseph S Carra, PhD (Pres), AB Chidester

National Highway Traffic Safety Administration, Washington, DC

Background/Objectives: The National Center for Statistics and Analysis (NCSA) has begun the development of two new data collection programs. The first called the National Motor Vehicle Crash Causation Survey (NMVCCS) will be used for capturing primary prevention data. The second program is an enhancement to Fatality Analysis Reporting System (FARS) that will make the reporting on data for fatal crashes faster.

Methods: Over time, NCSA has collected data utilized to improve the crashworthiness of vehicles. However, while fatality rates have declined, the number of fatalities and injuries stubbornly remain at staggeringly high levels. We feel that the next great strides will come from primary prevention, preventing crashes from occurring in the first place. To do this, NCSA has developed NMVCCS data collection program designed to collect nationally representative data on the factors that contributed to how crashes occur.

NCSA is attempting to develop a system that would provide "real-time" notification of fatalities. This program, called FASTFARS is being developed utilizing the FARS infrastructure. The goal of the program is to develop a "real-time" notification of fatalities, such that the number of highway related deaths that occurred during a given holiday period may be quickly reported.

Results: NMVCCS will collect nationally representative up-to-date factors associated with the causes of light motor vehicle highway crashes. This pre-crash data will be collected on-scene in order to collect the detailed data necessary to analyze, develop and evaluate potential intervention technologies for safety related systems.

The FastFARS system will report basic information about fatal crashes in "near real-time" to Agency managers. The reporting requirement is defined as: quantifying all fatal crashes within a shorter reporting period especially for holiday periods.

Conclusions: These data would allow NHTSA's crash avoidance policy, programs and rules to be based on reliable, real world data. In the next decades new crash avoidance technologies will be emerging. NHTSA will need relevant data to guide the design, development and evaluation of these new technologies. FHWA, FMCSA, private industry and public interest groups would be the beneficiaries besides NHTSA.

The success of FastFARS depends on reliable and timely notification of crash fatalities within each state; timely and accurate reporting of fatality counts by each state to NHTSA; and, compilation of State reported fatality counts into a National total.

Learning Objectives: The Student will: Describe the programs under development at NCSA. Understand the objectives of these new programs; including their mission, goals, and operations. Identify programs that will support future new areas for data analysis.

Fatal and Nonfatal Injuries in Brazil, 2002

Vilma P Gawryszewski, PhD (Pres)

Sao Paulo State Health Department, Brazil

Background: Injuries in Brazil are a major public health issue. Since 1980 injuries are the second death cause among Brazilian population.

Objective: To analyze national data on fatal injuries and nonfatal injury hospitalization in Brazil for 2002.

Methods: Data from 126,426 injury deaths and 708,829 injury outcomes in public hospitals were analyzed. Both datasets are operated by Brazilian Ministry of Health.

Results: The crude injury mortality rate was 72.4/100,000 (124.0/100,000 for male and 11.3/100,000 for female). For fatal injuries, the proportion of unintentional and intentional injuries was balanced (45.4% and 44.7%, respectively). Homicides were the lead cause, 33.9% for overall (28.4/100,000), followed

by transported related deaths, 25.9% overall (19.0/100,000). For nonfatal injuries the rate was 504.9/100,000 and unintentional injuries were predominant (82.9%). Overall, the leading cause of discharges was unintentional falls, accounting for 42.6% of victims treated in public hospitals (173.1/100,000). Transport related injuries placed in second position, 16.5% overall, 67.0/100,000. Fractures were the most common principal diagnosis 50.0% among discharges. The types of injury for fatal and nonfatal data sets varied by sex and age, highest rates were found for males and among young and older people.

Conclusion: These data indicate the need of developing injury preventive activities, considering the differences in fatal and nonfatal injuries. To prevent deaths, homicide has to be addressed. Among hospitalization, falls are the most relevant problem. Traffic related injuries play an important role among mortality and morbidity. Efforts have to be target to implement surveillance system in sentinels Emergency Departments in Brazil.

Injury Surveillance in New York City: A Model Program

Pia Savino, Susan A Wilt, DrPH (Pres)

New York City Department of Health and Mental Hygiene Bureau of Injury Epidemiology, New York, NY

Background/Objectives: New York City is the only U.S. city to conduct its own comprehensive intentional injury surveillance program. The Injury Surveillance System (ISS) was launched in 1993 in response to New York City's violence epidemic. ISS tracks injury deaths, injuries requiring hospitalization, and injuries resulting in Emergency Department treatment; it is used to identify and monitor injury patterns.

Methods: ISS gathers health data from three main sources. Injury deaths are obtained from the New York City Department of Health and Mental Hygiene Office of Vital Statistics and Epidemiology. Injury hospitalizations are obtained from the Statewide Planning and Research Cooperative System (SPARCS). ISS staff engages in active surveillance of intentional injury visits to a sample of Emergency Departments (EDs) at NYC hospitals. We summarize select statistics from these three data sources for 2003.

Results: In 2003, an estimated 41,743 patients with assault injuries were treated and released from 26 EDs participating in ISS. The majority of patients seeking treatment for assaults were male (65%); 35% were female. SPARCS data showed that 6,655 patients were admitted to hospitals for injuries sustained from an assault. 85% of these admissions were among males; 15% were among females. Homicide data from the Office of Vital Statistics revealed 657 deaths were due to an assault injury. 82% of deaths were among males; 18% were among females. Over half of all assaults treated and released or hospitalized and over half of injury deaths were in people between 15 and 34 years old.

Conclusion: ISS is a feasible way to assemble data from multiple sources and generate a comprehensive story of intentional injuries in an urban center. ISS data informs tailored injury prevention policy and programs.

Learning Objectives: List the data sources of a comprehensive injury surveillance system. Describe the merits of integrating multiple data sources. Identify person factors associated with intentional injury in New York City.

Multiple Cause of Injury Deaths Presented Using the ICD-10 Injury Mortality Diagnosis Matrix

Margaret Warner, PhD (Pres), LA Fingerhut, MA

Centers for Disease Control and Prevention, National Center for Health Statistics, Hyattsville, MD

Background: Multiple cause mortality data have long been neglected, often because of the complexity of analysis and presentation. We will introduce the new ICD-10 injury mortality diagnosis matrix which classifies the nearly 1,200 "S" and "T" codes into body regions and natures of injury.

Methods: Deaths with an underlying cause of injury were selected from the 2002 United States Multiple Cause-of-Death file. All record axis ICD-10 "S" and "T" codes excluding complications of medical and surgical care were categorized according to the ICD-10 injury mortality diagnosis matrix. The matrix is based on the framework of the ICD-9-CM Barell Matrix and adapted for ICD-10 by national and international collaborators with the input and coordination of NCHS.

Results: In 2002 there were 246,065 injury diagnoses mentioned on the death certificates of the 161,269 deaths due to an external cause for an average of 1.5 injuries per death. Injuries to the brain accounted for 27 percent of all the injuries listed on the death certificate and injuries to the whole body system accounted for 28 percent. Open wounds and poisonings were the leading natures of injury, each accounting for 17 percent of the injuries listed. Unspecified natures of injury accounted for 29 percent of the injuries. More than half of the injuries to the brain had a nature classified as an internal organ injury or an open wound.

Conclusion: The matrix allows for identification of very specific nature and sites but can be collapsed. In this analysis, 16 nature of injury and 17 body region categories are presented. This analysis included all injuries listed on the death certificate since a primary injury is not selected. Other approaches are possible.

Learning Objectives: Describe the ICD-10 injury mortality diagnosis matrixList the body regions and the natures of injury most often mentioned in deaths with an underlying cause of injury; Describe alternative methods of summarizing deaths with more than one injury listed.

The Impact of an Expanded Case Definition for Poisoning on Incidence and Costs

Monique A Sheppard, PhD (Pres), CB Snowden, PhD, BA Lawrence, PhD

Pacific Institute for Research and Evaluation, Calverton, MD

Objectives: Determining the magnitude of the burden of injury on the U.S. population is a high priority for health policy-makers. Approximately 2.4 million injuries are poison related, with over 50% of these occurring in children and adolescents. A regional expanded definition of a "poison related" case was created to increase the uniformity between the Toxic Exposure Surveillance System and the 'traditional' public health poisoning surveillance case definition. The expanded definition includes underlying cause of death, other diagnoses and other cause codes. This study estimates the incidence and cost of poisonings using this expanded definition for the entire U.S. Policy-makers can use this cost model to compare the impact of different age groups, to target areas for reducing costs, and to allocate appropriate health resources.

Method: Three national data systems and a modeling algorithm were used to estimate the number, medical, work loss, and quality of life costs of poisonings based on the expanded case definition.

Results: Total estimated costs for fatal poisons are $82.6 billion (in 2000 dollars). This total includes $153 million in medical cost, $28.2 billion in work loss costs, and $54.3 billion in quality of life costs. These costs overall are more than 20% greater than the respective costs for the traditional definition, in particular, the medical costs are 50% greater.

Conclusion: The additional cases and costs produced by the expanded definition are critical to the understanding of the public health impact of poisoning.

Learning Objectives: At the conclusion of the session, the participant (learner) in this session will able to: Understand an expanded poison case definition and its impact in terms of incidence. Understand the costs associated with the expanded definition and how these costs can be used to inform injury prevention and public health policies and programs. Apply an algorithm to "traditional" poisoning data obtained from exposure, hospital, and mortality data.

The Guide to Community Preventive Services invited session*

Tuesday 8:30 - 10:00 AM

A State Health Department Approach to Engaging Communities in Best Practices for Injury Prevention

Sallie Thoreson, MS (Pres)

Colorado Department of Public Health and Environment, Denver, CO

Objective: Evidence-based reviews of effective injury prevention strategies are part of the scientific literature. An important task of state health agencies is to assist local community-based programs to identify and implement injury prevention programs based on Best Practices.

Methods: Evidence-based reviews such as The Guide to Community Preventive Services are a welcome addition to effective injury prevention program development. However, there are barriers to getting local community-based coalitions to implement these strategies: The reviews do not contain implementation guidelines, coalition members may resist the pull away from familiar health education techniques, reviews generally look at single rather than multi-faceted interventions, and reviews are lacking for some key injury areas.

Results: The Colorado Department of Public Health and Environment (CDPHE) promotes the use of evidence-based strategies through website Best Practice documents, as well as promotion of these strategies in key injury prevention documents. Specifically, CDPHE has used the Community Guides in both the Motor Vehicle Injury Prevention and Violence Prevention areas. CDPHE has been working through the barriers with two coalitions to guide them in developing an enhanced enforcement approach to increase the use of safety belts. The Violence Prevention strategies are also being promoted, but barriers to implementation exist and the current reviews do not cover the full range of intervention areas.

Conclusions: Community-based organizations can benefit in technical assistance from state health agencies in training about the concepts of Best Practices and how to build group consensus around implementing the strategies on a local level.

Learning Objectives:
1. Describe how evidence-based reviews can be part of an effective community-based injury prevention program
2. Understand the barriers to implementing evidence-based strategies through community coalitions
3. Identify techniques state health agencies can use to promote evidence-based strategies

Community Guide Reviews and Recommendations for Reducing Alcohol-Impaired Driving

Randy W Elder, PhD (Pres), RA Shults, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: Systematic reviews were conducted to assess the effectiveness of a number of community-based interventions for reducing alcohol-impaired driving and alcohol-related crash fatalities. Evidence-based prevention efforts are necessary to reduce the more than 17,000 deaths and 250,000 injuries that occur annually from alcohol-related motor vehicle crashes.

Methods: Systematic reviews of the scientific literature were conducted using the methodology developed for the Guide to Community Preventive Services. Studies were included if they met specified quality criteria. The Task Force on Community Preventive Services, an independent group of public health experts, made recommendations regarding implementation of these interventions based on the strength of the evidence for their effectiveness.

Results: The Task Force recommended several interventions based on strong evidence of effectiveness, including: Sobriety checkpoints; .08% blood alcohol concentration (BAC) laws; Minimum legal drinking age of 21 years; and Mass media campaigns. Sufficient evidence was found to recommend: Lower BAC laws for young and inexperienced drivers; Server intervention training programs; and School-based education programs to prevent riding with drinking drivers. Several of these recommendations are limited to situations in which the interventions meet certain specified conditions.

Conclusions: These recommendations are useful for guiding practice and informing advocacy efforts of health educators and their organizations.

Learning Objectives:
By the end of this presentation, attendees will be able to (discuss, identify, list, summarize, and or evaluate) the following:
1. Explain the benefits of evidence-based approaches to injury prevention
2. Identify effective policies and programs to prevent alcohol-impaired driving
3. Use evidence-based recommendations to support their injury prevention efforts

The Guide to Community Preventive Services Demonstrates the Effectiveness of Therapeutic Foster Care for the Reduction of Chronic Violence Among Juveniles

Robert A Hahn, PhD, MPH (Pres)

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

In therapeutic foster care, youth who cannot live at their own home are placed in a special home in which foster parents have been trained to provide a structured environment to support the learning of social and emotional skills. The Task Force on Community Preventive Services, an independent, national, nonfederal body of experts from different walks of public health, conducted a systematic review of scientific evidence concerning the effectiveness of therapeutic foster care in preventing violent behavior among participating youth. Reviewed studies assessed two similar, but different interventions, each applied to a population distinguished by both age and underlying problems. One intervention, "cluster therapeutic foster care," involved longer programs (18 months on average) in which clusters of foster parent families cooperated in the care of children ages 5-13 years old with severe emotional disturbance (SED). The other intervention, "program-intensive therapeutic foster care," included shorter programs (6-7 months) directed toward adolescents (12 - 18 years of age) with a history of chronic delinquency, in which program personnel collaborated closely and daily with foster families. The Task Force found insufficient evidence to determine the effectiveness of cluster therapeutic foster care in preventing violence. On the basis of sufficient evidence of effectiveness, the Task Force recommends program-intensive therapeutic foster care for the prevention of violence among adolescents with a history of chronic delinquency. This report describes how the reviews were conducted and gives additional information about the findings.

The Guide to Community Preventive Services: Systematic Reviews and Evidence-Based Recommendations for Interventions to Improve Public Health

Ann Dellinger, PhD, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The Guide to Community Preventive Services (Community Guide) is a collection of systematic reviews and recommendations regarding the effectiveness of population-based interventions designed to promote health, prevent disease, injury, disability, and premature death. The motor vehicle injury systematic reviews evaluate community-based interventions to increase child safety seat use, increase safety belt use, and reduce impaired driving.

Methods: The Guide to Community Preventive Services uses standardized methods to conduct systematic reviews evaluating the effectiveness of community interventions. Studies are included if they meet specified criteria related to quality of study design and execution. The Task Force on Community Preventive Services makes recommendations regarding implementation of evaluated interventions based on the strength of the evidence for their effectiveness.

Results: The Task Force recommended four interventions to increase use of child safety seats (mandatory-use laws, community-wide information and enhanced enforcement campaigns, distribution and education programs, and incentive and education programs) and three interventions to increase safety belt use (mandatory-use laws, primary enforcement laws, and enhanced enforcement programs). There was insufficient evidence to recommend programs to increase child safety seat use through education alone.

Conclusions: In selecting and implementing interventions, communities should strive to develop a comprehensive program to reduce motor vehicle occupant injuries that includes legislation, enforcement, public education, training, and other community-oriented strategies. Decision-makers should consider these evidence-based recommendations along with local needs, goals, and constraints when developing traffic safety programs.

Learning Objectives:

1. Describe the goals of the Guide to Community Preventive Services
2. Outline how studies are identified for inclusion in Community Guide reviews
3. Identify effective interventions for increasing child safety seat and safety belt use

Traumatic Brain Injury

Monday 4:45 - 6:15 PM

A Comparison of Case Ascertainment of Traumatic Brain Injury Deaths Among Massachusetts Children (0-17 years), 2000 Using Clinical and ICD-10 Based Data Sets

Holly Hackman, MD, MPH, Loreta McKeown, MPH (Pres), B Hume, MPH, V Ozonoff, PhD

Massachusetts Department of Public Health, Boston, MA

Background/Objectives: Approximately 29% of injury-related fatalities among children 1-17 years in Massachusetts (MA) are associated with a traumatic brain injury (TBI). Surveillance data on TBI-related deaths relies heavily on International Classification of Disease (ICD) codes generated from death certificates. The evaluation of the sensitivity and predictive value positive (PVP) of Vital Records Death Databases (VRDD) for these deaths is important in the interpretation of this data. Clinical autopsy reports in the Medical Examiner Database (MED) may be helpful in evaluating data quality.

Methods: The 2000 MA-VRDD and MA-MED were analyzed separately to identify TBI deaths among children less than 18 years. ICD-10 and clinical definitions were used to identify the TBI-related deaths in the MA-VRDD's multiple-cause-of-death file and the MA-MED, respectively. The cases ascertained in each were linked. The reason for discrepancies was examined.

Results: There were 50 unduplicated TBI-related deaths among MA children in 2000 (3.3/100,000). Twenty-nine (58%) of the cases were identified through both data sources, 1 (2%) was identified in MA-VRDD only. Twenty (40%) were identified through the MA-MED only. Further examination of these cases revealed that 17 (85%) had "Unspecified Multiple

Injuries" (T07) as the only code listed in the multiple-cause-of-death fields. Using the ME data set as the "gold standard", the sensitivity of the MA-VRDD for these events was 59%; the PVP was 97%.

Conclusions: This analysis highlights the importance of using multiple data sources for TBI surveillance and alerts epidemiologists to the problem of possible under-ascertainment of TBI-related deaths among children using ICD-coded death files. In MA, this appears to be particularly related to a lack of injury specificity on the death certificate of victims with multiple traumatic injuries.

Learning Objectives:
1. Identify important data sources for surveillance of traumatic brain injury deaths
2. List differences in traumatic brain injury death data findings between death certificates and medical examiner autopsy records
3. Understand the reasons for potential under-ascertainment of traumatic brain injury deaths in children using electronic, coded death files

Accuracy of Mild Traumatic Brain Injury Case Ascertainment Using ICD-9 Codes

Jeff Bazarian, MD, MPH (Pres), S Mookerjee, BA, B Lerner, PhD, P Veazie, PhD

University of Rochester School of Medicine, Rochester, NY

Objective: To determine the accuracy of mild traumatic brain injury (TBI) case ascertainment using the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9) codes proposed by the CDC in a 2003 Report to Congress.

Methods: Prospective cohort study of all patients presenting to an urban academic emergency department (ED) over 6 months. All patients were assessed for the presence or absence of clinically-defined mild TBI, using the definition proposed by the American College of Rehabilitation Medicine. After ED discharge, the ICD-9 diagnosis codes assigned were examined for the presence or absence of a CDC-proposed code for mild TBI. These codes were "skull fracture", "concussion", "intracranial injury of other and unspecified nature", and "head injury, unspecified". Using clinically-defined mild TBI as the gold standard, the sensitivity, specificity, predictive values, and likelihood ratios of the ICD-9 codes were calculated.

Results: Of the 35,096 patients presenting to the ED, 516 had clinically-defined mild TBI and 1,000 were assigned one or more of the mild TBI ICD-9 codes proposed by the CDC. The sensitivity of these codes was 45.9% (95% CI: 41.3, 50.2) with a specificity of 97.8% (95% CI: 97.6, 97.9). The positive predictive value was 23.7% (95% CI: 21.2, 26.4) and the negative predictive value was 99.2% (95% CI: 99.1, 99.3).

Conclusions: The identification of mild TBI patients using retrospectively assigned ICD-9 codes appears to be inaccurate, compared to a real-time clinical assessment. These codes are associated with a significant number of false positives and false negatives. Mild TBI incidence and prevalence estimates using these codes should be interpreted with caution. ICD-9 codes should not replace a clinical assessment for mild TBI when accurate case ascertainment is required.

Learning Objectives: Understand how ICD-9 codes are currrently employed in injury surveillance. Describe the clinical definition of mild TBI; List the mild TBI ICD-9 codes recently proposed by the CDC for the purposes of research and surveillance; Describe the ability of these codes to accurately identify patients with clinically defined mild TBI.

Assessing the Reliability of Abbreviated Injury Scale Scores for the Head Region (HAIS), Colorado 1998-2000

Indira Gujral, MS[1,2,3] (Pres), B Gabella, MSPH[3], H Hedegaard, MD, MSPH[3], and K Meng, PhD[3]

[1]Colorado State University, Fort Collins, CO; [2]Colorado Injury Control Research Center, Fort Collins, CO; [3]Division of Injury at the Colorado Department of Public Health and Environment in Denver, CO

Background/Objectives: The Colorado Department of Public Health and Environment (CDPHE) maintains two statewide population-based data systems containing hospitalized traumatic brain injury (TBI) cases, the Colorado Traumatic Brain Injury Surveillance System and the Colorado Trauma Registry. Both systems contain manually scored Abbreviated Injury Scale (AIS-90) for the head region (HAIS), an anatomical measurement of traumatic brain injury severity. Little is known about the reliability of manually scored HAIS. The purpose of this study is to assess intra- and inter-rater reliability for hospitalized TBI patients in Colorado, 1998-2000.

Methods: TBI cases were defined based on CDC criteria. HAIS scores range from 1 to 6; six equals an unsurvivable injury. To determine intra-rater reliability, cases were sampled from the Colorado TBI Surveillance System and HAIS re-scored by the same credentialed CDPHE coder. To assess inter-rater reliability, both CDPHE datasets were used to compare HAIS scores. For this study, the trained CDPHE coder was considered the "gold standard." Weighted kappa statistics (Landis and Koch 1977) and Chamberlain's positive percent agreement were used to assess agreement.

Results: The kappa statistics for intra-rater (n=237) and inter-rater (n=1477) reliability were 0.81 (very good) and 0.65 (good to fair), respectively. Preliminary analysis indicates that HAIS positive percent agreement is low for moderate HAIS measures 3 and 4 (39%) and higher for mild and severe HAIS measures 2 and 5 (~60%). Further analyses are currently being conducted.

Conclusion: AIS-90 scores are used by hospital, state and national injury researchers to adjust for injury severity and identify changes needed for clinical treatment. Since TBI is a leading contributor to injury deaths and hospitalizations, unreliable HAIS scores can have a direct impact on injury research.

Learning Objectives: Describe the role of HAIS and AIS-90 in injury research, specifically trauma research. Identify the importance of having reliable HAIS measures and identify limitations for HAIS reliability. Understand how surveillance systems can be linked to further injury research.

Deficits in Dynamic Balance Control Following Concussion

Tonya M Parker, MS (Pres), R Catena, L Osternig, PhD, P Van Donkelaar, L Chou, PhD

Department of Human Physiology, University of Oregon, Eugene, OR

Background/Objectives: Knowledge of functional impairment following a brain injury is critical to preventing reinjury. This study quantified deficits in concussed subjects' dynamic balance control while walking with divided attention.

Methods: Fifteen subjects with Grade 2 concussions (CONC) and 15 uninjured controls (NORM) were observed while walking under two conditions: 1) undivided attention (single-task) and 2) while concurrently completing mental tasks (dual-task). Testing began within 48 hours of injury and repeated at 5, 14, and 28 days post injury. NORMs were evaluated at similar intervals. Whole-body center of mass (COM) motion and center of pressure (COP) during gait were assessed using a motion analysis system and two force plates. Anterior-posterior and medial-lateral COM displacement (APROM, MLROM), peak forward velocity (ANTVEL), and maximum separation between COM and COP (APMAX) were used to examine dynamic stability. Three-way repeated-measures ANOVA with Tukey tests were completed to determine differences between group, task, and testing day.

Results: Significant group by day interactions were found for MLROM ($p < .04$) and APMAX ($p < .00$). Significant task by day interactions were found for APROM ($p < .00$) and ANTVEL ($p < .00$). Follow-up analyses revealed MLCOM was significantly greater for CONCs on days 2, 5, and 28. CONCs also had decreased APMAX at days 2, 14, and 28. APROM was significantly decreased for CONCs on days 2 and 5, and ANTVEL was significantly decreased on the dual-task for all 4 days.

Conclusions: Concussed individuals displayed significant differences in the control of COM motion when compared to controls for up to four weeks. This suggested that concussion has a measurable effect on the ability to maintain dynamic stability.

Learning Objectives: Describe dynamic stability differences between concussed and uninjured individuals. Identify patterns of functional recovery following concussion. Detect deficits from concussion in simple and complex dynamic motor tasks.

Concussion in High School Football: Incidence, Risk Factors, and Implications for Prevention

Jess F Kraus, PhD (Pres), K Schaffer, MPH, M Ramirez, PhD, HK Shen, PhD

Southern California Injury Prevention Research Center, University of California, Los Angeles, CA

Background/Objective: Between 1 and 2 million high school (H.S.) students participate in competitive football and from 300,000 to 1.2 million sustain a football related injury each year. While strains and sprains are the most frequently reported injury type, concussions can be the most serious. The objective of this study was to measure incidence, risk factors, and injury mechanisms within a large cohort of H.S. football players over 2 years in 86 California high schools.

Methods: Player background data were solicited from the players. Exposure and injury information were obtained by athlete trainers, coaching staff, team managers, and student volunteers. Information was collected from 5,118 players

for the 2000 and 2001 football seasons. Injury descriptions, injury rates per person-time of exposure and features of the environment at the time of practice or game events are given.

Results: 5,118 players representing over 1.4 million exposure hours formed the cohort. Of 1307 players with an injury, 14.5% had a concussion (rate of 14.4/100,000 exposure hours). Twelve players had two concussions. Most concussions occurred from a collision with another player while being tackled or tackling. All but one concussion occurred while wearing full equipment. Concussion rates per 100,000 exposure hours were highest for running backs, kickers, and tight ends. Rates were highest for seniors, those aged 18 or older, and those with 4 years of playing exposure. Rates were 10 times higher for game vs. practice exposures. Most factors associated with environmental features were not remarkable.

Conclusion: Players with the most exposure, older age, and certain playing positions are at risk of a concussion suggesting that specific interventions for these persons must be developed to reduce risks.

Results: 190 of 1,307 players representing 1,401, 184 exposure hours were injured over the 2 years. 5,118 players sustained a head injury (concussion). Over 10% were second injuries in the current or preceding season. Most head injuries occurred from collision contact with another player while being tackled or tackling another player. Almost all head injuries occurred while wearing full equipment.

Learning Objectives: Report on expanded research methods for high school competitive sports studies. Describe the nature and severity of head injuries in high school football. Identify and measure risk factors associated with high school football head injuries.

Standardized Assessment of Concussion-Emergency Room (SAC-ER) for Emergency Medical Care Providers

James P Kelly, MD[1] (Pres), M McCrea, PhD[2], C Randolph, PhD[3]

[1]University of Colorado School of Medicine, Denver, CO; [2]Medical College of Wisconsin, Milwaukee, WI; [3]Loyola University Medical School, Maywood, IL

Background/Objectives: To introduce the use of a new quantified measure of the cognitive effects of concussion at the accident scene or during emergency ambulance transport.

Methods: Twenty-seven persons who sustained mild traumatic brain injury (MTBI) with a GCS score higher than 13 were administered the SAC-ER by emergency medical system (EMS) personnel within 15 minutes of injury. Causes of injury included motor vehicle crashes, bicycle incidents, falls and assaults. Only three of the subjects were rendered briefly unconscious, while 50% of the subjects exhibited both retrograde and post-traumatic amnesia. When performed, neuroimaging studies were negative. A control group of 27 non-injured individuals matched by age and education were also administered the SAC-ER. Injured subjects and controls were also asked to complete a post-concussion symptom checklist.

Results: Subjects who sustained MTBI performed significantly worse than controls on all domains of neurocognitive function assessed by the SAC-ER, including Orientation, Immediate Memory, Concentration and Delayed Recall as well as the composite Total Score of all subtests. Injured subjects endorsed more items on the symptom checklist than controls, and items related to neurocognitive dysfunction (e.g., memory problems) correlated with performance on associated sections of the SAC-ER.

Conclusions: These findings suggest that the SAC-ER is a clinically useful instrument for EMS personnel in measuring and characterizing neurocognitive dysfunction during the acute phase of MTBI. Similar to earlier findings in sport-related concussion, the SAC-ER was sensitive to subtle neurocognitive impairment as a marker of MTBI, despite normal neurological status and negative neuroimaging studies. An objective assessment instrument such as the SAC-ER also provides an index measure of acute impairment against which post-injury recovery can be tracked.

Learning Objectives: Determine which neurocognitive functions are most commonly affected by concussion. Describe the proper examination method for assessing concussed individuals using the SAC-ER. Identify the association between symptoms and performance of neurocognitive evaluation of individuals who have sustained MTBI.

Traumatic Brain Injury

Tuesday 8:30 - 10:00 AM

Emergency Department (ED)-Treated Traumatic Brain Injury (TBI) Surveillance: Minnesota's Experience

Heather A Day, MPH (Pres), JS Roesler, MS, AM Gaichas, MS, MR Kinde, MPH

Minnesota Department of Health, St. Paul, MN

Background/Objectives: Population-based estimates of ED-TBI are relatively rare. An underlying assumption is that the majority of ED-TBI is mild TBI (mTBI). The study objectives are to estimate the predictive value positive (PV+) of ICD-9-CM codes in the CDC administrative data case definitions for TBI6 and mTBI5 and describe the epidemiology of ED-TBI in Minnesota.

Methods: Minnesota has conducted surveillance of hospitalized TBI since data year 1993 and has received ED universal billing (UB) data from 1998 forward from the Minnesota Hospital Association. Surveillance of ED-TBI began with 2001 data. In October 1997, 'Head Injury Unspecified' (959.01) was introduced as a new ICD-9-CM diagnostic code and is included in the current CDC TBI definition. A stratified random sample of medical records from 2001-2002 was reviewed. 'Head Injury Unspecified' cases were analyzed separately. Analysis was limited to abstracted data for nonfatal cases of ED-TBI from 2001-2002 supplemented with ED UB data from 1998-2003.

Results: PV+ of TBI ICD-9-CM diagnostic codes will be presented along with sensitivity estimates for Minnesota's surveillance system. Preliminary results show that the PV+ ranged considerably by ICD-9-CM diagnostic code and sample year. Clinical features of abstracted cases will be discussed along with more detailed cause of injury and demographic information. UB data from 1998-2003 will be presented to estimate rates by ICD-9-CM TBI diagnostic code, year of injury, gender, age and residence.

Conclusions: Differences in PV+ by abstraction year will be explored and discussed. Despite this variation, "Head Injury Unspecified" poorly predicted TBI (preliminary pooled PV+=31% ±2.9%). Therefore, additional data are needed to ascertain whether this diagnostic code should continue to be included in the CDC TBI definition.

Learning Objectives: Understand the complexity of surveillance of ED-TBI and the impact of the "Head Injury Unspecified" (code ICD-9-CM diagnostic code 959.01). Learn strategies to improve injury surveillance and research methods through lessons learned by Minnesota. Describe the epidemiology of ED-TBI, including its overlap with mTBI, in one of the first states to perform surveillance.

Mild Traumatic Brain Injury (MTBI) and Subsequent Post-Concussive Syndrome (PCS) Among Adult Emergency Department Patients Presenting With Minor Injury

Ronald Maio, DO[1] (Pres), N Kirsch, PhD[1], C Tan-Schriner, PhD[2], P Balcena, MPH[1], S Frederickson, RN[3]

[1]University of Michigan, Ann Arbor, MI; [2]Michigan Public Health Institute, Okemos, MI; [3]Saint Joseph's Mercy Hospital, Ann Arbor, MI

Objective: Although mild traumatic brain injury (MTBI) and subsequent post-concussive syndrome (PCS) have been identified as major injury problems, there is a paucity of studies in the Emergency Department (ED) setting addressing these problems. The purpose of this study is to determine the frequency of MTBI and subsequent PCS in adult ED patients. Such information is crucial for developing effective and efficient intervention strategies to address these problems.

Methods: This is a prospective cohort study with phone follow-up at 1, 3, and 12 months. Subjects are patients ≥18 years old with a minor injury; all subjects are treated and released from the ED. Subjects are screened to determine if they meet CDC MTBI criteria. Data is collected from a baseline questionnaire administered in the ED and at follow-up. Clinical data is also abstracted from the medical record. The Rivermead Postconcussion Symptoms Questionnaire was used to identify PCS. The study is ongoing. We present preliminary data for baseline, 1- and 3-month follow-ups. Simple descriptive statistics were calculated.

Results: 294 patients have been screened. Mean age: 38.2 years old (range: 18-88); 46.3% are males; 37.4% have MTBI. At follow-up, 61.5% had PCS at 1 month and 51.2% at 3 months. Mean number of symptoms at 1 month was 5.5 and 4.9, (+) and (–) PCS, respectively. Among PCS subjects, the age group with the highest incidence of PCS is 18-34 (57.9%); most common mechanisms of injury are MVC (40.8%), unintentionally being stricken by an object and unintentional falls (25.0%, respectively).

Conclusions: Preliminary data suggest that the majority of adult ED patients diagnosed with MTBI, treated and released will have PCS at 3 months post-injury.

Learning Objectives: Describe the frequency and characteristics of Emergency Department (ED) patients with mild traumatic brain injury (MTBI). Describe the trajectory of post concussive syndrome (PCS) and PCS severity of ED patients with MTBI. Understand that MTBI and subsequent PCS is a substantial health problem.

Predictors of Long-Term Disability After Traumatic Brain Injury

Anbesaw Selassie, DrPH (Pres), P Guimaraes, PhD, P Ferguson, PhD, E Pickelsimer, DA

Medical University of South Carolina, Charleston, SC

Background/Objectives: Long-term outcomes of Traumatic Brain Injury (TBI) are well documented. However, outcome determinants have not been interfaced with surveillance data to estimate persons likely to develop long-term disability. This study has three objectives: 1) identify predictors of disability using uniformly available variables, 2) develop algorithm using simplified decision tree, 3) validate the algorithm using outcome data from TBI Follow-up Registry (SCTBIFR).

Methods: Data from surveillance were merged with SCTBIFR. A three-level response of disability—probable, possible, unlikely—was created using measures from Activities of Daily Living (ADL), Alertness Behavior Scale (ABS), and Post-injury Symptoms Checklist. Variables included in CDC surveillance guidelines were selected as independent variables and their relationships with the three-level response were examined in a multivariable loglinear model. Risk ratios were converted into probabilities for each conditional node in the algorithm. The model's sensitivity was examined with c-statistic to determine the joint discriminating power of the predictors.

Results: TBI severity, age, comorbidity, and discharge disposition showed very good prediction for probable disability (c=0.76) and modest prediction for possible disability (c=0.57). The risk of probable disability was highest with severe TBI, age >64, presence of comorbid conditions, and referral to rehab/long-term care. The combination of these risk factors yielded 16 terminal nodes in the algorithm with probabilities ranging from 0% to 100% for developing disability. When this was applied to the 2003 TBI surveillance data set, 16%, 27%, and 57% of the persons discharged alive with TBI were estimated to have probable, possible, and unlikely disability, respectively.

Conclusions: Surveillance data could be used to estimate the number of people developing long-term disability after TBI. This estimate is useful for planning service delivery and policy development.

Learning Objectives: Identify the variables that could be used to predict long-term disability. Develop an algorithm that could be used to predict long-term disability after TBI. Estimate the number of people who are likely to develop long-term disability in your state.

The Maryland Traumatic Brain Injury Surveillance Program: Challenges and Successes

Tracey Serpi, MS (Pres), L Demeter, PhD

Maryland Department of Health and Mental Hygiene, Baltimore, MD

Background: The Maryland Traumatic Brain Injury (TBI) Surveillance Program was created to collect annual incident-level data on all resident TBI hospitalizations and deaths in Maryland. To date, seven years of data (1996 through 2002) have been collected and analyzed.

Methods: Using CDC guidelines, hospital discharge and mortality data are unduplicated and linked to form a database of all TBI hospitalizations and deaths in Maryland. The information collected through this surveillance system is being used to design prevention and intervention strategies, as well as to assess programs that address this major public health problem.

Results: Several studies have been conducted using the TBI surveillance data: 1) an analysis predicting factors that affect hospital admission for children with TBI; 2) an agreement study of hospital discharge and trauma registry data for all trauma patients admitted to any of the nine Maryland trauma centers; 3) a study comparing TBI admissions in the 1999 Maryland Hospital Discharge (MHD) data to the Maryland Trauma Registry and the Medical Record abstraction data; 4) a study examining repeat TBI hospital admissions and emergency department visits; and 5) six community level projects focusing on traffic safety, shaken baby syndrome, firearm safety, and fall prevention.

Conclusions: Maryland has overcome many barriers in the creation of a useful TBI surveillance system. During the course of this program, many techniques have been applied to overcome these barriers and make the program a success. Successful collaborations have been established to disseminate the information on TBI, studies have been conducted to further examine the TBI problem in Maryland and interventions are being initiated to specifically target this problem.

Learning Objectives: Describe the TBI surveillance system in Maryland. Identify the barriers to implementing a surveillance system. Describe the achievements of the Maryland program.

Traumatic Brain Injury

Tuesday 1:45 - 3:15 PM

Serum S-100B and Cleaved-Tau are Poor Predictors of Long-Term Outcome After Mild Traumatic Brain Injury

Jeffrey Bazarian, MD, MPH[1] (Pres), F Zemlan, PhD[2], S Mookerjee, BA[1], T Stigbrand, PhD[3]

[1]University of Rochester School of Medicine, Rochester, NY
[2]University of Cincinnati School of Medicine, Cincinnati, OH
[3]Umea University Umea, Sweden

Background: To determine the relationship of initial S-100B and C-tau levels to long-term outcome after mild traumatic brain injury (mild TBI).

Methods: A prospective study of 35 mild TBI patients presenting to the emergency department (ED) between January and March of 2003 was conducted. Serum collected within 6 hours of injury was analyzed for S-100B and cleaved-tau (C-tau). Three-month outcome was determined by post-concussive symptom self-report over the telephone using the Rivermead Post Concussion Questionnaire (RPCQ). Pearson correlation coefficient, area under a receiver operator curve, sensitivity and specificity were used to relate S-100B and C-tau levels to three-month outcome. Statistical significance was defined as $p<0.05$.

Results: The mean age was 37.0 years (range 10-83, SD +18.8 years). Eighteen subjects (51.4%) were female and 29 (82.9%) were Caucasian. There was a poor linear correlation between serum marker levels and 3-month RPCQ scores (S-100B: r=0.071, C-tau: r=-0.21). There was no statistically significant correlation between marker levels and 3-month PCS (S-100B: AUC=0.589, 95%CI .038, 0.80; C-tau: AUC=0.634, 95%CI 0.43, 0.84). Using any detectable level as the cutoff between normal and abnormal serum levels, the sensitivity and specificity of S-100B and C-Tau for three-month PCS ranged from 35% to 71%.

Conclusions: Both S-100B and C-tau appear to be poor predictors of 3-month outcome. While definitive evidence awaits a larger trial, efforts to develop new markers of mild TBI should not be delayed.

Educating Two Diverse Audiences About Prevention and Management of Mild Traumatic Brain Injury

Jane Mitchko, MEd, CHES (Pres), M Huitric, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The U.S. Congress' Children's Health Act of 2000 charged the Centers for Disease Control and Prevention (CDC) with implementing a national education campaign to increase public knowledge about traumatic brain injury (TBI). CDC's National Center for Injury Prevention and Control set out to raise awareness and educate two diverse audiences—physicians and high school athletic coaches—about the implications of TBI and concussion, and their roles in preventing and correctly managing these injuries.

Methods: With TBI experts, CDC first developed a strategic communication plan to guide development of materials for physicians. Based on qualitative research findings, CDC narrowed its target audiences, developed messages, determined desired elements and formats, created content and materials, and pre-tested the materials. The resulting tool kit, "Heads Up: Brain Injury in Your Practice," was comprised of clinical information, patient information, and a CD-ROM containing scientific literature and printable versions of patient materials. User assessments from feedback forms and an online survey revealed a need to provide information about TBI to athletic coaches. Using the above methods, CDC developed "Heads Up: Concussion in High School Sports." The tool kit will be pilot tested in five states before it is launched nationally. In both cases, partner support is critical in successfully extending CDC's reach to desired target audiences.

Results: Overwhelmingly positive user response demonstrates that physicians and coaches are highly receptive to the tool kits, and appreciate readily available, comprehensive information on the topic.

Conclusions: Comprehensive educational tool kits containing various elements tailored to specific audiences can be effective in raising awareness among professionals about TBI and other important health topics.

Learning Objectives: Understand how information can be tailored to meet the needs of specific target audiences. Incorporate qualitative and quantitative research in the process of developing materials, such as educational tool kits. Leverage partnerships with government agencies, nonprofit organizations, and other groups to extend projects' reach to identified target audiences.

Emergent Endotracheal Intubation of Head-Injured Patients is Associated With Increased Mortality

Mervin I Griffin, MD (Pres), V Hogan, MD, A Bartolucci, PhD, K Denninghoff, MD

University of Alabama at Birmingham, Injury Control Center, Birmingham, AL

Background: Variable effects of emergent endotracheal intubation on mortality are reported in recent studies of traumatic brain injury.

Objective: To examine outcomes using data from a large head injury database.

Methods: Our study includes 1,007 patients prospectively enrolled into the database over 3 years and followed over 10 years. Intubations were carried out without use of rapid sequence induction. Patients were divided into groups of injury using Head and Neck Abbreviated Injury Score (JHAIS), Abbreviated Injury Score (AIS) and Injury Severity Score (ISS). We included a propensity score as a covariate to account for the effect of preexisting medical conditions. The principle dependent variable was mortality in patients who were intubated versus those not intubated.

Results: Endotracheal intubation was the greatest predictor of mortality in our population. Using all severities combined, the odds ratio (OR) of death due to intubation was 6.785 (95% confidence 3.977,11.576, p<.001). JHAIS>=3 OR=5.565 (95%,3.063,10.111, p=.001). JHAIS<3, OR= 13.101 (95%, 2.462, 69.721, p=.0026). Other variables associated with increased odds of mortality were head and neck abbreviated injury score, non-head ISS score, age, injury type (closed vs. open injury), systolic blood pressure and propensity score. Our model achieved a greater than 90% prediction accuracy.

Conclusion: In all strata of TBI severity (moderate to critical), endotracheal intubation was associated with increased mortality despite controlling for measures of patient severity.

Learning Objectives: Describe how airway management without use of rapid sequence induction (non-RSI) to prevent hypoxia is currently a standard of care in the management of the traumatic brain-injured patients in the out-of-hospital setting. Describe how several large retrospective studies now suggest that non-RSI endotracheal intubation is associated with adverse outcome in TBI despite controlling for other measures of injury severity and patient background characteristics.Outline why prospective investigation is now warranted to examine the effect of emergent endotracheal intubation of the head-injured patient in the prehospital and emergency department setting.

Evidence for Brain Injury After Concussion: Looking Beyond the CT Scan

Jeff Bazarian, MD, MPH (Pres), B Blyth, MD

University of Rochester School of Medicine, Rochester, NY

Background: The emergency management of cerebral concussion typically centers on the decision to perform a head CT scan, which only rarely detects hemorrhagic lesions requiring neurosurgery. The absence of hemorrhage on CT scan is often equated with a lack of brain injury. However, observational studies revealing poor long-term cognitive outcome after concussion suggest that brain injury may be present despite a normal CT scan. To explore this idea further we review the evidence for objective neurologic injury in humans after concussion, with particular emphasis on those with a normal brain CT. This evidence comes from studies involving brain tissue pathology, CT scanning, MRI scanning, serum biomarkers, formal cognitive and balance tests, functional MRI, PET, and SPECT scanning. We discuss the strengths and weaknesses of the evidence in each case. These reports make a compelling case for the existence of concussion as a clinically relevant disease with demonstrable neurologic pathology. Areas for future injury prevention research are suggested.

Learning Objectives:

1. Describe the type of neuronal injury that occurs after a concussion
2. Describe the limitations of the CT scan for detecting neuronal injury after a concussion
3. List imaging modalities that are able to detect neuronal injury after concussion

Project Focus: A Problem-Solving Intervention for Family Caregivers of Persons With Spinal Cord Injury

Timothy R Elliott, PhD (Pres), R Shewchuk, PhD

University of Alabama at Birmingham, Birmingham, AL

Background: Family members who assume caregiving duties for a loved one with a severe disability often develop problems with depression. We developed a problem-solving intervention for family caregivers of persons with spinal cord injury. We evaluated the effectiveness of this intervention. Phase one included three men and 27 women in the intervention group and 22 women and eight men in the control group. Parents (N = 26) and spouses (N = 22) were over-represented; the sample was 63% Caucasian. Phase two included 5 men and 27 women in the intervention group and 2 men and 27 women in the control group. Spouses (N = 24) and parents (N = 19) were over-represented; the sample was 70% Caucasian.

Methods: In phase one, consenting family caregivers were randomly assigned to a control group (N = 30) or to a problem solving training group (N = 30). A trained counselor provided individual problem-solving training on three occasions in the intervention group. In phase two, consenting caregivers were randomized to a control group with a videophone (N = 29) or a problem-solving intervention group with a videophone (N = 32). Problem-solving training was provided monthly in the intervention group. The Social Problem-Solving Inventory – Revised (SPSI-R) and the Inventory to Diagnose Depression (IDD) were administered at baseline and at six months and one year later. Descriptive and correlational analyses were conducted.

Results: Participants who received problem-solving training reported significantly lower depression (M = 7.46) than persons in the control groups (M = 11.14) at the six month assessment. Participant attrition occurred in both phases.

Conclusions: Problem-solving training appeared to have palliative effects on caregiver depression over a six-month period.

Learning Objectives: Describe a community-based problem-solving intervention for family caregivers of persons with spinal cord injury. List the basic components of the social problem solving model for developing interventions. List the benefits of a problem-solving intervention for family caregivers of persons with spinal cord injury.

Violence

Tuesday 10:15 - 11:45 AM

Faith and Medicine in Action: Understanding, Preventing, and Responding to Firearm Violence and Suicide

Marilyn J Bull, MD (Pres)

Riley Hospital for Children, Indiana University School of Medicine, Indianapolis, IN

Background/Objectives: Firearm violence is the leading cause of injury death in Marion County (Indianapolis), Indiana, with over 60% being suicides. Indiana's suicide and firearm death rates have been higher than the national averages for the last decade.

The Indiana University School of Medicine views clergy as an essential partner in reducing these public health problems. This presentation outlines a two-year pilot program initiated in March 2004 for faith based leaders in the Indianapolis area.

Objectives: Providing faith leaders with information regarding risk signs for suicide and firearm violence. Familiarizing faith leaders with ways to respond when they recognize someone at risk. Providing an environment where faith leaders can discuss theological issues related to suicide and firearm violence.

Methods: Faith leaders attended a six-hour training where they received training materials and were encouraged to train other faith leaders using those training materials. Those involved in the program will receive three-, six-, and twelve-month follow-up evaluations.

Results: Initial evaluations of pilot participants indicated increase in knowledge, change in attitude and increased awareness of patterns of behavior indicating increased risk of suicide. Initial findings indicate that faith leaders have found this information helpful in identifying and referring members of their community for intervention.

Conclusions: The pilot program has shown that faith leaders are receptive to learning more about the topics of suicide and firearm injury prevention. The training materials helped empower them to recognize and intervene with those at risk for suicide or firearm injury. Research implications include further study related to the faith leaders' role in prevention of suicide and firearm injury. Practice implications could suggest the need for including such public health topics in theological training programs.

Learning Objectives: Explain who is at risk for suicide or gun injuries in Marion County (Indianapolis), Indiana. Describe the importance of involving the faith community in suicide and firearm injury prevention. Describe strategies for involving the faith community in suicide and firearm injury prevention.

Neighborhood Economic Trends as a Predictor of Individual Violence Risk

Anthony Fabio, PhD (Pres), R Loeber, PhD, GK Balasubramani, PhD

University of Pittsburgh, Pittsburgh, PA

Background: During the late 1980's the US experienced dramatic increases in violence with a subsequent decrease to the early levels. Understanding whether changes are due to differences between birth cohorts (cohort effects) or changes in social factors (period effects) is important. The Pittsburgh Youth Study (PYS) study followed two cohorts over 14 years – 1987-2000. We analyzed PYS data utilizing repeated measures regression to assess whether differences in violence between the cohorts could be explained by period or cohort effects after adjusting for individual-level factors. Results confirmed a strong period effect - cohort differences were rendered insignificant. Gang participation, drug-dealing, and gun carrying were strong individual-level correlates. We postulate that changes in trends are due in part to period effects that influence the developmental pathway an adolescent follows.

Further analysis assessed economic trends to examine possible period factors. Economics have been related to violence; however, commonly used community-level economic data are not adequate for assessing trends, e.g., census data is available every ten years. We examined number of jobs, median annual pay, and percent unemployment collected each year for the city of Pittsburgh. We found that period effects appear to be explained by both average annual pay and the number of jobs in the city. Percent unemployment was not a factor. These findings fit in with the crack cocaine epidemic theory of crime trends. As average annual pay decreased in the late 1980's, boys may have been more likely to engage in economically motivated crime such as the crack cocaine market. This in turn could have lead to increased violence. However, as the economic expansion occurred in the 1990's increased wages may have provided a "pull" back to the legitimate market.

Prevalence and Cultural Risk Factors Associated With Serious Violence Among Chinese, Cambodian, Lao/Mien, and Vietnamese Youth

Thao N Le, PhD, MPH (Pres)

National Council on Crime and Delinquency Asian/Pacific Islander Youth Violence Prevention Center, Oakland, CA

Background/Objectives: Although much research has been conducted in the area of youth violence, there is a paucity of research addressing violence in Asian and Southeast Asian youth. Because Asian youth are often regarded as the model minority, many have the misconception that violence does not exist in this population. Further, most studies making group comparisons have not considered the importance of establishing measurement and structural equivalence.

Methods: 329 Asian and Southeast Asian youth were recruited from schools and community-based organizations to participate in a structured one-hour face-to-face interview (60% response rate). Measures administered included delinquency, serious violence, peer delinquency, gang involvement, school and parent engagement, acculturation, ethnic identity, cultural conflict, and individualism/collectivism. Analyses consisted of calculating prevalence, odds ratios, and structural equation modeling using LISREL 8.52. Peer delinquency was also tested as a potential mediator between cultural risk factors and serious violence.

Results: Southeast Asian youth, particularly Cambodians and Lao/Mien, reported highest rates of violence, at 24% and 20%, respectively. In addition to the common known risk factors for serious violence such as peer delinquency and gang involvement, cultural factors such as cultural conflict and individualism also increased the odds of serious violence whereas protective factors included collectivism and ethnic identity. Structural equation analyses provided support for measurement and structural equivalence in terms of peer delinquency being the strongest predictor of violence, suggesting that the measures and paths can be adequately directly compared across groups. Peer delinquency, in turn, fully mediated the relation between individualism, cultural conflict and violence.

Conclusions: Prevention and intervention programs should consider the role of culture in preventing youth violence, particularly among minority groups. Further, researchers making group comparisons need to establish measurement and structural equivalence.

Learning Objectives: Identify risk factors associated with delinquency and serious violence including cultural ones for Chinese and Southeast Asian youth. Recognize the need to establish measurement and structural invariance in conducting analyses across different ethnic groups. Describe one potential process by which cultural risk factors is associated with delinquency and serious violence.

Prevention of Deaths From Violence in the United States: The Role of Interventions During Childhood and Adolescence

Beth E Ebel, MD[1] (Pres), R Loeber, PhD[2], CA McCarty, PhD[1], MM Garrison, MPH[1], DP Farrington, PhD[3], DA Christakis, MD[1], FP Rivara, MD[1]

[1]University of Washington, Seattle, WA; [2]University of Pittsburgh, Pittsburgh, PA; [3]Cambridge University, Cambridge, UK

Background: Continuity in aggressive behavior over time is the hallmark of most violent offenders. Because of this continuity of behavior, many investigators have turned their attention to testing interventions to prevent violence by altering the early life course.

Objective: To calculate the number of homicides in the U.S. that might be prevented through early interventions for a cohort of male youth under age 18.

Design/Methods: We determined the number of homicide deaths and resulting years of potential life lost (YPLL) due to violence by the cohort of males aged 18 in 2000. We performed a literature review and identified three types of childhood interventions effective at reducing subsequent violent arrests: nurse home visiting, school based violence prevention, multisystemic therapy. Decision analysis was done to estimate the reduction of homicide, YPLL, and years of incarceration that would be expected if interventions were implemented on a national scale.

Results: An early childhood education program similar to the Perry Preschool Program could potentially reduce subsequent murders by up to 34% (95% C.I. -8-56%), saving an estimated 4,316 lives annually, and resulting in $5.4 billion savings in incarceration costs (Table 3). A school-based violence prevention program could potentially save an estimated 3,047 lives annually, resulting in $3.9 billion savings in incarceration costs, though the confidence intervals around these estimates are large. National implementation of multi-systemic therapy for juvenile delinquents with prior arrests could potentially save an estimated 2,491 lives annually, resulting in $2.5 billion savings in incarceration costs. Interventions in childhood or adolescence could potentially prevent 59% (95% C.I. 24-88%) of all murders, saving 7,499 (95% C.I. 3,067-11,103) lives annually and resulting in $9.2 billion (95% C.I. $2.7 billion - $13.9 billion) savings in incarceration costs.

Conclusions: Implementation programs during childhood and adolescence could potentially avert significant costs in human lives, safety and security, and economic losses that result from violent crime.

Learning Objectives: Identify childhood violence prevention programs with long-term reduction in violent arrests. Determine potential impact of intervention programs on reduction of homicide years of potential life lost and years of incarceration. Use of decision analysis tools in estimating impact of interventions to reduce violence.

Violent Deaths in Oregon: 2003

Xun Shen (Pres), LM Millet, MA Kohn

Oregon Department of Human Services, Portland, OR

Objective: This report presents violent deaths in 2003 for the state of Oregon. Using the data form the National Violent Death Reporting System (NVDRS), the report provides detailed information on mechanism, nature of deaths, demographic, and circumstance surrounding violent deaths.

Methods: Based on the death certificates, medical examiner's reports, and relevant documents in law enforcement data system, NVDRS collects, abstracts, codes and stores all information related to violent deaths. This is a preliminary report to present Oregon's NVDRS data. The types of deaths in the report are based on the death certificate.

Results: In 2003, there were 803 violent death incidents that involved 813 deaths in Oregon. The occurrent violent death rate was 22.8/100,000. Of those deaths, 595 (73.2%) were classified as suicide, 100 (12.3%) were homicide, 112 (13.8%) were undetermined and 6 (0.7%) were of unintentional firearm injury. Firearms, poisoning and suffocation accounted for 86% of the total deaths. Most violent death incidents occurred at a house/apartment (69%). Nearly 60% of the suicide victims were reported to be currently depressed, 40% currently had mental heath problems, 36% disclosed their intention to commit suicide, 32% experienced a crisis within two weeks and 19% had a previous suicide attempt before they died. The common circumstances surrounding suicides were physical health problems and problems with an intimate partner. The common circumstances associated with the homicides were suspected felony type, argument, and robbery. Suspected alcohol use was found in 40% of homicide victims.

Conclusion: This report provides new epidemiological characteristics of violent deaths. Using NVDRS's data could yield new information that could be used to develop and implement strategies to reduce violent death in Oregon.

Learning Objectives: Recognize that the violent injury is a serious public health problem. Learn what NVDRS is and why it is important. Discuss how to apply NVDRS 's data on the violent injury prevention.

Violence

Tuesday 1:45 - 3:15 PM

Nonfirearm-Related Homicides: New Mexico, 2001-2003

Neely N Kazerouni, DrPH, MPH[1,2] (Pres), N Shah, MS[1], CM Sewell, DrPH, MS[1], MG Landen, MD, MPH[1]

[1]New Mexico Department of Health, Santa Fe, NM; [2]Centers for Disease Control and Prevention Epidemiology Program Office, Atlanta, GA

Background: New Mexico (NM) has the highest rate of nonfirearm-related homicide in the United States and ranks sixteenth highest in firearm-related homicide. Because nonfirearm-related homicides are inadequately described in the literature, characterization of nonfirearm-related homicide victims will enhance efforts to reduce homicides in NM.

Methods: Homicide victims were identified through the NM Office of the Medical Investigator. We calculated age-specific and age-adjusted homicide death rates for 2001-2003 by sex and race/ethnicity. Logistic regression was used to measure associations between covariates of interest and nonfirearm-related homicide.

Results: Nonfirearm-related homicides comprised 32.9% of U.S. homicide victims, 46.9% of NM homicide victims, and 74% of NM Native American (NA) homicide victims. Of nonfirearm-related homicide victims, 37.3% were beaten; 32.1% were stabbed; and 11.8% were strangled. Female victims comprised 30.2% of nonfirearm-related homicides and 18.3% of firearm-related homicides. A blood alcohol concentration (BAC) >0.08 mg/dL was detected in 43.4% of all (61.4% of NA) nonfirearm-related homicide victims and in 32.9% of all (50% of NA) firearm-related homicide victims. Nonfirearm-related homicide death rates were highest among NA males aged 25-34 years (31/100,000). NAs (rate ratio [RR]=4.8; 95%CI=1.2-20.3) and Hispanics (RR=1.6; 95%CI=0.3-8.3) had higher rates of nonfirearm-related homicide death than non-Hispanic whites. After controlling for age and urban/rural residence, nonfirearm-related homicide victims were more likely than firearm-related victims to be NA (adjusted odds ratio [AOR]= 4.0; 95%CI=2.0-7.8), female (AOR=2.0; 95%CI=1.3-3.3), and have a BAC >0.08 mg/dL (AOR=1.6; 95%CI=1.1-2.5).

Conclusions: Homicide prevention efforts among NAs in NM should be focused on nonfirearm-related homicides. The association between problem drinking and nonfirearm-related homicide should be further characterized. Continued surveillance of nonfirearm-related homicides will assist these efforts.

Learning Objectives:

1. Describe the distribution of types of homicide in NM
2. Describe the characteristics of nonfirearm-related homicide victims in NM
3. Identify the surveillance needs for homicide prevention efforts in NM

The Epidemiology of Assault Injuries to Home Care Attendants in New York City

Kathryn Brown Schaffer, MPH (Pres), JF Kraus, MPH, PhD, HK Shen, PhD, V Ozonoff

Southern California Injury Prevention Research Center, University of California, Los Angeles, CA

Background/Objectives: With the increasing utilization of health care services provided at home, the home care attendant (HCA) may be at an increased risk for injuries due to inadequate training and experience dealing with the challenges of this unique work environment and client. It is known that home care assault-related injuries, often minor in nature, are often unreported yet occur frequently among this population of workers. The objectives of this project are to describe and measure the incidence, injury patterns and risk factors associated with work-related assaults among a cohort of HCA workers employed by agencies in New York City.

Methods: The source population is HCAs employed by agencies under contract with New York City. Nine HCA agencies (representing over 12,000 employees) were selected for participation based on locale, total employees and ethnicity. All reported assaults among this study population from June 1, 1997 through August 31, 2002 were identified.

Results: 231 assault-related injury claims were reported during the study period. A majority of these assaults resulted in minor injuries requiring little or no medical treatment, occurring while

the HCA was working alone performing normal work duties. Descriptive statistics will focus on the nature of the incidents (work tasks at time of assault and type of provocation), descriptions of injuries and medical treatment, lost time from work, reporting mechanisms in place and training given to the HCA, if any.

Conclusion: Assaults to HCA's represent a growing problem that must be addressed. Certification and increased training for HCA's, as well as a thorough review of job duties, work schedule and working environment are factors that should be explored in establishing hypotheses for intervention.

Learning Objectives: Identify risk factors associated with the HCA work environment. Describe the nature of the assaults and resulting injuries inflicted on the HCA population. Describe training and reporting mechanisms in place for the HCA.

The Picture of Violence: A Descriptive Analysis of First-Year Data Findings of the Massachusetts Violent Death Reporting System

Holly Hackman, MD, MPH, Victoria Ozonoff, PhD SMAS, (Pres), L Ortega, MD, MPH, Y Zhang, MD, MPH

Massachusetts Department of Public Health, Boston, MA

Background: Fatalities secondary to violent injuries are an important public health problem within MA and across the United States. The National Violent Death Reporting System (NVDRS) is a new relational database established to improve our understanding of the circumstances surrounding these events so that our prevention efforts can be effectively targeted. NVDRS collects linked data on violent death incidents from Vital Records, Medical Examiners/Coroners, law enforcement, and crime labs.

Objective: To provide an overview of the data available on violent deaths occurring in Massachusetts (MA) in 2003 using the NVDRS.

Method: Death data from the 2003 MA-NVDRS was used to analyze the types of violent incidents deaths, the weapons used, the circumstances surrounding these deaths and the impact of these deaths on demographic groups.

Results: In 2003, there were 1256 violent death incidents in MA involving 1,270 victims. Of the victims, 410 were suicides, 134 were homicides and 726 were of undetermined intent. Six of the incidents were homicide-suicides. Seventy-five percent of all victims were male, 4% were under18 years of age, 6% were 65 years and older. The most common weapon used in suicides and homicides was hanging (37%) and firearm (55%), respectively. Poisons were the leading weapon among deaths of undetermined intent (93%); 80% of these deaths had a positive toxicology for opioids. Where circumstance information was available, 16% of suicide victims had a prior attempt; 15% of homicides were precipitated by another crime.

Conclusion: The scope of violent death incidents in MA is complex. The new National Violent Death Reporting System provides detailed information on the range of demographics and circumstances which can be used in the development of prevention strategies.

Learning Objectives: List the primary data sources of information contained in the National Violent Death Reporting system database. Describe the different types of violent deaths. Describe the scope of information collected in the National Violent Death Reporting System.

Provocations to Violence in PG-13 Rated Films: 1999-2000

Theresa Webb, PhD (Pres), L Jenkins, MPH, JF Kraus, PhD, AA Afifi, PhD

Southern California Injury Prevention Research Center, UCLA School of Public Health, Los Angeles, CA

Background/ Objective: The Motion Picture Association of America's PG-13 rating category is based on the fundamental warning: "parents strongly cautioned." The target audience for PG-13 films is the adolescent. Empirical research has consistently found three primary effects from exposure to media violence: imitation/aggression, desensitization and fearfulness. In this study, we examine the contextual features of violent actions in PG-13 films which have been found to influence viewers.

Methods: We examined the top grossing PG-13 films from 1999 (N=31) and 2000 (N=46). For each bodily violent act, the initiator and victim of violence were identified. The weapon, reason for violence, consequences, and degree of realism and forcefulness were also examined. Data analyses included descriptive statistics and ordinal logistic regression.

Results: In the sample a total of 2,251 violent actions were observed. Two hundred and fifteen victims of violence were identified. Violence was predominantly initiated to protect life (39%). Most acts of violence (57%) involved the body as a weapon. Over one third of the violence was of lethal force.

Conclusions: PG-13 films are saturated with violence and elements consistently shown to be associated with harmful effects. We suggest that the MPAA rating board consider the evidence produced by media effects research and subsequently develop a systematic content-based rating system.

Learning Objectives: Describe the basic contextual features of violent representations. Identify the effects associated with these features. Understand the basics of social learning theory as it relates to media studies.

Which Parents Ask Other Parents Whether Their Home Contains a Firearm?

Matthew Miller, MD (Pres), D Azrael, D Hemenway

Harvard School of Public Health, Boston, MA

Background: More than a third of homes with children ages 18 and under have at least one firearm. Approximately 40% of these firearm-owning families with children store one or more firearms in an unlocked place; 9% keep their guns loaded as well as unlocked. Approximately half of all unintentional firearm deaths among children appear to occur in the victim's home and half occur in the home of a neighbor, relative, or playmate.

Methods: A nationally representative sample of 1,017 parents of children 18 years of age or younger were asked whether, over the 12 months prior to the survey, they had asked another parent whether their home contained firearms. Independent variables included several demographic characteristics as well as whether a doctor, nurse, or health care worker ever talked to them about guns.

Results: Overall, 15% of all parents had asked other parents if their home contained firearms (11% of male parents and 18% of female parents). In multivariate analyses, having had a health care worker ever talk to the respondent about guns nearly tripled and female gender nearly doubled the likelihood that a parent had asked another parent whether their home contained firearms. Income, gun ownership, marital status, and region were not associated with asking other parents about the presence of guns in their home.

Conclusion: Health care workers can have a large and potentially positive effect on parenting behavior involving firearm safety.

Learning Objectives: By the end of the session participants will be able to: Describe the predictors of whether parents are likely to inquire about the presence of firearms in other parent's homes. Identify interventions likely to increase parental willingness to engage in this conversation with other parents.

Workplace Violence invited session*

Monday 4:45 - 6:15 PM

NIOSH's Initiative for Workplace Violence and National Conference

Matt Bowyer (Pres), D Hartley, EdD, EL Jenkins, MS

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV

Background/Objectives: In 2002, there were 609 workplace homicides in the U.S. From 1993-1999, there were an estimated 1.7 million nonfatal workplace victimizations annually. Workplace violence has been recognized as an important occupational safety and health issue that crosses all industry sectors. NIOSH's objective is to develop a national workplace violence research and prevention initiative for all types of workplace violence and to translate research to practice by presenting findings, recommendations, and approaches to workplace violence prevention.

Methods: A combination of intramural and extramural efforts has been undertaken by NIOSH. Extramurally, these include funding for new research grants. Intramurally, efforts focus on (1) evaluating existing guidelines; (2) conducting an inventory of efforts in workplace violence prevention; (3) collaborating with other agencies to collect improved data; and (4) collaborating with other groups to raise awareness and disseminate information, such as, holding a national conference.

Results: Facilitated by NIOSH leadership, a cadre of research and prevention professionals is beginning to take shape and forums for networking among these professionals have been created. Previously unavailable data on workplace violence prevention policies, training, and other security measures in U.S. workplaces have been collected along with data on perceptions of safety and security from a cross-section of U.S. workers.

Conclusion: Research and prevention activities of NIOSH are greatly enhanced through the involvement of stakeholders and the combination of intramural and extramural efforts. NIOSH has served as a catalyst for setting research and prevention priorities and for partnerships across industry sectors and diverse disciplines.

Learning Objectives: The participants will be able to:
1. Learn about NIOSH's history in the area of workplace violence prevention
2. Learn about NIOSH's workplace violence prevention initiative
3. Discuss the results of NIOSH's national conference

Societal Cost of Workplace Homicides in the United States

Daniel Hartley, EdD (Pres), E Biddle, PhD, L Jenkins, MS

National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV

Background: The Census of Fatal Occupational Injuries (CFOI) reported 8,672 workplace homicide victims between 1992 and 2001. Although rarely calculated for homicides, cost estimates are important for prevention and research efforts.

Methods: Societal costs were estimated using the cost-of-illness approach applied to CFOI data. The cost calculation model incorporated medical expenses, wages, and household production losses.

Results: Workplace homicides, during the 10-year period, had a total cost of nearly $6.5 billion dollars (1999 dollars) and a mean cost of $800,000. The retail trade industry division had the highest number of homicides (3,637) and total cost $2.1 billion for males and $556,000 for females. Within the occupation division classifications, the highest estimated total cost of work-related homicides was in the technical, sales, and administrative support classification with a total cost of just over $2 billion.

Conclusions: The burden on society of workplace homicides measured using the cost-of-illness approach is substantial. These estimates of the cost of work-related homicides can be used to improve occupational injury prevention and control program planning, prioritizing research needs, policy analysis, evaluation of safety and health interventions, and advocacy for a safer work environment.

Learning Objectives: The participants will be able to:
1. Define the societal burden of occupational homicide
2. Describe the burden as it relates to selected occupations and industries
3. Identify potential areas for implementing workplace violence prevention interventions

Trends in Rates of Occupational Homicides, 1993-2002

Scott Hendricks, MS, (Pres), K Anderson, L Jenkins

Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, Morgantown, WV

Background: Homicide has varied between the second and third leading cause of occupational fatality in the United States during the years 1993-2002. Overall homicide rates in the United States during this same period have demonstrated a significant decline.

Methods: Using data from the Census of Fatal Occupational Injuries (CFOI) and the Current Population Survey (CPS), trends in the rates of occupational homicide were evaluated for the years 1993-2002 by occupation, industry, sex, age, race, and state. Using CFOI, trends in the number of occupational homicides were evaluated for the circumstance, location, and time of the incident.

Results: Overall, there was a significant decline in the rates of occupational homicide of approximately 8% per year during this time period; however, this trend was not consistent for all subgroups considered. Taxi cab drivers and chauffeurs demonstrated the greatest decline of all occupational subgroups and this decline was significantly greater than the decline in overall occupational homicide rates. While there was a decline in the rates of occupational homicide for the health services and public administration industries, this decline was not as great as the overall decline in occupational homicide rates. When looking at the circumstance of the homicide, only homicides which were robbery related demonstrated a significant decline. Neither the circumstances of violence by disgruntled customers/clients, disgruntled workers/former workers, nor domestic violence demonstrated a significant decline in the number of occupational homicides during this period.

Conclusions: While workplace homicides are declining in the US, the declines are not occurring uniformly across demographic and occupational categories. Future research and prevention efforts should focus on replicating successes and addressing those areas where little or no change has occurred.

Learning Objectives: The participants will be able to:
1. Identify the recent trends which occurred in occupational homicides
2. Identify which industries and occupations demonstrated the greatest decline in occupational homicides
3. Identify which circumstances, demographics, and events demonstrated the greatest decline in occupational homicides

Workplace Bullying: Current Status and Future Directions

Paula L Grubb, PhD (Pres), RK Roberts, PhD, JW Grosch, PhD, and WS Brightwell, BS

Center for Disease Control and Prevention, National Institute for Occupational Safety and Health, Cincinnati, OH

Background: Workplace bullying has emerged as an important organizational issue, particularly in Europe where investigators spearheaded initial research efforts. In the U.S., however, bullying has received less emphasis as the focus has been on high-profile workplace shootings and homicides spotlighted in the media.

Studies of bullying have shown that being on the receiving end of such behaviors results in deleterious effects in worker health and well-being. In terms of cost to the organization, bullying has been associated with absenteeism, higher turnover rate, reduced productivity, and litigation costs. There is literature documenting the link between work organization factors and bullying.

Methods: This presentation will discuss general measurement issues for workplace bullying. It will also provide an overview of the National Organizations Survey (NOS-III), a national telephone survey of U.S. organizations.

Results: This presentation will discuss the prevalence of workplace bullying in general, as well as specific findings from the NOS-III. Results from the NOS-III indicate that 24% of companies reported some degree of bullying occurring during the past year. In the most recent incident, the aggressor was typically an employee and the victim of bullying was also typically an employee.

Conclusions: Findings of the NOS-III as well as other studies indicate that workplace bullying is pervasive. Future research should be aimed at establishing the linkages between workplace bullying and work organization factors in U.S. workers, and at assessing workplace bullying as a psychosocial stressor. The end goal of this process is to develop processes or tools for organizational interventions for workplace bullying and to evaluate the efficacy of these interventions. The presentation will offer suggestions for next steps, with specific emphasis on NIOSH activities.

Learning Objectives:
1. Describe behaviors that are considered workplace bullying
2. Identify risk factors for workplace bullying
3. List potential prevention strategies for workplace bullying

Workplace Violence – Addressing Intimate Partner Violence as a Workplace Issue

Robin R Runge, JD (Pres)

Director, American Bar Association Commission on Domestic Violence, Washington, DC

Learning Objectives: Participants will be able to do the following as a result of the presentation:

1. Identify and recognize legal issues raised by intimate partner violence and its impact on the workplace:
   - What is the connection between intimate partner violence and the workplace – stats on the percentage of victims who lose their jobs because of domestic violence, are harassed at work or experience other problems
   - How to create an environment where you can identify a survivor in your workplace and provide support
   - A review of workplace policies and union contracts that may address intimate partner violence in the workplace
2. Learn what state and federal employment laws are implicated by intimate partner violence in the workplace
   - Overview of Title VII, FMLA, ADA, OSHA, Workers' Compensation and Unemployment Compensation and their intersection with intimate partner violence at work.
   - Overview of similar state laws and newer state employment laws that provide unique protections to victims of intimate partner violence
3. Learn about advocacy tips and tools used to address the legal issues raised by intimate partner violence in the workplace

Intimate Partner Violence and the Workplace

Kimberly K Wells, MA (Pres)

Corporate Alliance to End Partner Violence, Bloomington, IL

Background/Objectives: Intimate partner violence (IPV) affects thousands of working people every day. It impacts their ability to care for themselves and their families, work safely and effectively, and impacts the financial strength and success of the companies for which they work. There are steps that employers can take to proactively and effectively address IPV in the workplace.

Methods: One of the most effective ways companies can address IPV at the workplace is through collaborative relationships with other employers. One such example is the Corporate Alliance to End Partner Violence (CAEPV). CAEPV

is the only national nonprofit organization founded by the business community with a mission to educate and aid in the prevention of domestic violence through the influence of the workplace.

Results: CAEPV employers have identified key areas that make workplace programs most effective. Liz Claiborne Inc. provides an excellent case study regarding how one company has used the suggested steps and best practices to create a dynamic and successful program.

Conclusions: Future challenges include overcoming perceived barriers such as legal ramifications or lack of recognition of impact on employee performance. Other challenges include lack of research specifically in the areas of costs and benefits. It may be meaningful to show employers that domestic violence costs a certain number of dollars per year per employee.

Learning Objectives: Participants will be able to do the following as a result of the presentation
1. Recognize the impact that intimate partner violence has on the workplace
2. Learn what companies across the United States are doing to address intimate partner violence
3. Identify current practices for addressing intimate partner violence in the workplace

Supplemental Text: Randel, J. A., & Wells, K. K. (2003). Corporate approaches to reducing intimate partner violence through workplace initiatives. Clinics in Occupational and Environmental Medicine, 3, 821-841.

Posters

Poster 2570

Correlates of Injury/Poisoning Episodes in the United States

Masood A Shaikh, MD, MPH, IA Shaikh, MD, MPH, PhD

Chester Health Department, Chester, PA

Objective: To describe age, gender, race, and income level associated with injury/poisoning episode and its prevalence in the Unites States population aged 18 and above.

Methods: Using data from the National Health Interview Survey-2002 (NHIS), we identified all the respondents who reported one or more injury or poisoning episode in the past three months. A multistage sampling design was adopted for NHIS-02 to have a nationally representative sample. A deign-based analysis with STATA 8 was done using Logistic Regression, Odds Ratio (OR) were computed for the association of injury/poisoning episode with various demographic variables.

Results: The overall prevalence of injuries/poisoning episodes in the past three months was 2.06% and 95% Confidence Interval (CI) was 1.96 - 2.17% (n = 93,386). In females prevalence was 1.87% (95% CI 1.96 - 2.17), while in males prevalence was 2.27% (95% CI 2.11 - 2.42). Compared to females, males were more likely to report injury or poisoning episode in the past three (OR 1.2, 95% CI 1.09 - 1.32). While compared to Whites, being Hispanic or Black bestowed protection form injury/poisoning episode OR 0.50, 95% CI 0.43 - 0.59 and OR 0.56, 95% CI 0.47 - 0.66, respectively. Regarding annual income, compared to the group making 20 thousand or more, individuals making less than twenty thousand were more likely to report injury/poisoning episode, OR 1.14, 95% CI 1.00 - 1.29. Age was assessed in four groups. Compared to 18 - 30 year group, statistically significant association was observed in age group 66 and above; OR 1.43, 95% CI 1.19 - 1.72, while no association was observed in either 31 - 45 or 46 - 65 age groups.

Conclusion: Older males with annul family incomes of less than twenty thousand were more likely to have reported injury or poisoning episodes in the past three months.

Learning Objectives: Identify sociodemographic correlates of injuries/poisoning episodes in adults; Describe the prevalence of injuries/poisoning episodes by gender; Learn to access and use publicly available data.

Poster 2572

The Safety of All-Terrain Vehicles: Findings From the NEISS All Injury Program for 2000-2002

Ches S Jones, PhD

University of Arkansas, Fayetteville, AR

Background/Objectives: All-terrain vehicles (ATV) are a popular form of transportation and recreation. ATVs are used for a variety of reasons due to their ability to handle rough, rugged terrain. However, research has reported an increased risk for injury from ATV use, especially for the young and inexperienced riders. The purpose of this study is to investigate injuries related to ATV use using data from the National Electronic Injury Surveillance System (NEISS) All Injury Program for years 2000-2002.

Methods: Data for the study was obtained from the NEISS All Injury Program for the years 2000-2002. Variables included in the data were age, gender, ethnicity, year, location, body part, diagnosis, disposition, primary contributing factor, and intentionality. Analysis included frequencies, cross tabulation, and logistic regression. A weight was applied to the data to provide estimates.

Results: An estimated 339,896 [95% CI (293,262-386,530)] ATV-related injuries were reported during 2000-2002. The majority of injuries occurred to white (72%), males (79%) who were between the ages of 15 and 44 (65%). Children under 15 accounted for almost 25% of the injuries. The head/neck region sustained the most injuries (25%) followed by the leg/foot region (23%). The top three diagnoses were fractures (26%), contusion (25%), and strains/sprains (16%).

Conclusions: ATV-related injuries are still common after the banning of three wheel ATVs and regulating four wheel ATVs. The at-risk groups are young adult males. Children are still sustaining injuries. Recommendations are for legislation to prohibit use of ATVs to people under the age of 16 and enact regulations to ensure for the safety of ATV operators. Such regulations could include helmet use, education, licensing, and mandatory reporting of wrecks.

Learning Objectives: After the presentation, participants will be able to: Identify risk factors for ATV-related injury; List the major factors causing ATV-related injury; Understand recommended prevention measures for reducing ATV-related injury.

Poster 2573

Personal Watercraft-Related Injuries: Epidemiology as Identified in the 2000-2002 NEISS All Injury Program

Ches S Jones, PhD

University of Arkansas, Fayetteville, AR

Background/Objectives: Personal watercraft (PWC) are popular water recreation vehicles. PWC are usually one- to two-seat watercraft less than 10 feet in length. However, their speeds are similar to other watercraft. Past research has reported an increase in injuries related to PWC use, especially for the young and inexperienced operators. The purpose of this study is to investigate injuries related to PWC use using data from the National Electronic Injury Surveillance System (NEISS) All Injury Program for years 2000-2002.

Methods: Data for the study was obtained from the NEISS All Injury Program for the years 2000-2002. Variables included in the data were age, gender, ethnicity, year, location, body part, diagnosis, and disposition. Analysis included frequencies, cross tabulation, and logistic regression. A weight was applied to the data to provide estimates.

Results: An estimated 35,543 [95% CI (29,199-41,707)] PWC-related injuries were reported during 2000-2002. The majority of injuries occurred to white (78%), males (68%) who were between the ages of 20 and 44 (67%). Children under age of 15 accounted for almost 10% of the injuries. The leg/foot region sustained the most injuries (33%) followed by the head/neck region (26%). The top three diagnoses were contusion (25%), strains/sprains (25%), and lacerations (17%).

Conclusions: The trend for PWC-related injuries reported to U.S. emergencies rooms is going down according to NEISS data. This is good news for young children who represented a smaller number of injuries compared to past research. Future research should determine the impact of regulations; age restrictions; education; and, PWC sales on injury trends related to PWC use in order to use as a model for developing and implementing successful injury interventions.

Learning Objectives: After the presentation, participants will be able to: List the most frequent outcomes of a PWC-related injury reported in U.S. emergency rooms; Name the age groups that report the most PWC-related injuries; Identify potential interventions for decreasing PWC-related injuries.

Poster 2583

Gender Differences in Ice Hockey Injuries Attributed to Illegal Activity: What Proportion of Sports-Related Injuries Can Be Attributed to Foul Play?

Christie Knox MA[1], RD Comstock PhD[1,2]

[1]Center for Injury Research and Policy, Columbus Children's Research Institute, Columbus, OH; [2]The Ohio State University, Columbus, OH

Background/Objective: Illegal activity/foul play has been largely overlooked as a risk factor for sports-related injuries. The objective was to compare gender differences in injury rates and proportions of injuries attributed to illegal activity in collegiate ice hockey using National Collegiate Athletic Association (NCAA) Injury Surveillance System (ISS) data.

Methods: Injury rates/1000 game-exposures and proportions of injuries attributed to illegal activity were calculated using 2003 and 2004 aggregate data.

Results: Although men had a higher injury rate (RR=1.3, 95% CI 1.1-1.6, p<.01), women attributed a higher proportion of injuries to illegal activity (RR=2.0, 95% CI 1.2-3.2, p<.01). The most commonly injured body part was the shoulder for men and the head for women; however, the most commonly injured body part attributed to illegal activity by both was the head. Women attributed a greater proportion of head (RR=2.1, 95% CI 1.0-4.3, p<.04) and shoulder (RR=9.0, 95% CI 2.4-34.2, p<.01) injuries to illegal activity than men. Women also attributed a higher proportion of less severe injuries to illegal activity (RR=2.5, 95% CI 1.1-5.5, p<.05). Although the rules of women's ice hockey prohibit contact, there was no significant gender difference in injuries for which penalties were assessed.

Conclusions: Gender differences exist in patterns of collegiate ice-hockey injuries including injuries attributed to illegal activity. While the risk of ice hockey-related injury can not be completely eliminated, reducing illegal activity through preventive interventions such as enhanced enforcement of the rules and player and coach education about risks associated with illegal activity could lower injury rates in general and head and shoulder injuries specifically.

Learning Objectives: Identify illegal activities/foul play as an overlooked risk factor for ice-hockey injuries; Describe gender differences in ice-hockey injuries attributed to illegal activity/foul play; List two potential methods for reducing illegal activity/foul play.

Poster 2584

Smoke Alarm Installation Program

Renee Schwenn, Sue Smith RN, MSN

Children's Hospital of Michigan, Detroit, MI

Background/Objective: Nationwide, every 134 minutes a civilian dies from a house fire. Detroit has approximately 35,000 fires a year, of which 15,050 of the homes had smoke alarms but only 6,772 of the smoke alarms were operational. The Smoke Alarm Installation Program is an effective method of educating families and installing working smoke alarms into homes.

Methods: The Fire/Burn Home Safety Survey collects data to analyze fire safety practices in the home. This data determines which homes qualify to have smoke alarms installed. After the survey is completed, qualified families are contacted to schedule an installation. Education and installation of the smoke alarms is approximately 20 minutes. Follow-up calls are made six-months post installation/education to assess behavioral change.

Results: To date in Detroit, 790 smoke alarms have been installed in 481 homes that housed 1,299 adults and 962 children. Follow-up calls to the families reveal that 88% had tested their smoke alarms monthly, 57% of the families had changed their batteries, 68% have developed escape plans and 53% of those families have practiced the escape plans.

Conclusions: Post installation data shows a dramatic increase in the behavioral change. Greater change occurred in areas that were easier to implement (i.e., testing smoke alarms, changing the batteries, and development of an escape route). Total family commitment to practice escape routes is more difficult to achieve. Continued research is needed to determine reasons for lack of practice. Additional funding is required for installations of smoke alert systems for those who are deaf or hard of hearing and cannot depend on the sound of the regular alarm to alert them to a fire.

Learning Objectives: Outline important objectives on beginning their own program; Identify specific fire safety issues in their community and collect; Analyze behavioral fire safety data.

Poster 2586

Urban ER Referral to a Youth Violence Prevention Website: safERflintteens.com

Rebecca M Cunningham, MD[1], MA Walton, MPH, PhD[1], JE Weber, DO[2], RF Maio, DO, MS[1]

[1]University Of Michigan, Ann Arbor, MI; [2]University Of Michigan, Hurley Hospital, Flint, MI

Objectives: To examine rates and correlates of violence among youth in an urban ER and describe predictors of compliance with referral to a violence prevention website.

Methods: Consecutive teens 12-17 completed written surveys at an urban level I trauma center. Teens were referred to a violence prevention website that provided personalized feedback on anger triggers, modeled nonviolent conflict resolution, and gave community/Internet resources. Use of site over one month was recorded by specific logon ID.

Results: 115 youth were recruited (14% refused): 57.8 % African American, 43.5% male. 81% used Internet in the past month. In the past year, 86% of youth report physical violence, 22% of violence resulted in an injury requiring medical attention. For example, 58% hit someone, 33% note group fighting, 32% report a conflict involving a weapon, 21% carried a weapon, 23% drank alcohol, and 22% smoked marijuana. Teens smoking marijuana reported more violent behaviors ($p<.05$) but not more victimization ($p>.05$) than teens not smoking marijuana. Adolescents drinking alcohol did not differ from adolescent's not drinking alcohol on violent behaviors or being the victim of violence ($p>.05$). Frequency of violent behaviors and victimization were correlated with depression ($p<.01$), nonviolent delinquency, ($p<.01$) and community exposure to violence ($p<.01$). One-month post-ER visit, 24% of teens logged on website. Frequency of Internet use was the only baseline characteristic that significantly predicted visiting website.

Conclusions: Referral to a youth violence prevention website is feasible in a busy ER and represents a practical emerging resource for urban teens who report both high past year violence rates as well as frequent Internet use. Future work is needed to evaluate effectiveness of such approaches on behavior change.

Learning Objectives: Describe rates of past year violence and weapon carriage in youth 12-17 presenting to an Urban ER; Describe correlates to past year violence in youth 12-17 presenting to an urban ER; Identify both the Internet as well as the Emergency Department as feasible settings for future youth violence intervention research.

Poster 2589

Traumatic Brain Injury Hospitalizations Among American Indians/Alaska Natives

Wesley Rutland-Brown, MPH[1], LJD Wallace, MSEH[2], MD Faul, PhD[1], JA Langlois, ScD, MPH[1]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Injury and Disability Outcomes, Atlanta, GA; [2]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention, Atlanta, GA

Objective: To compare the incidence of nonfatal traumatic brain injury (TBI) hospitalization among American Indians/ Alaska Natives (AI/AN) with that of other race groups and to assess alcohol and protective equipment (PE) use among those who sustained TBI related to a motor vehicle (MV) incident.

Methods: Data were obtained from 13 states funded by the Centers for Disease Control and Prevention to conduct TBI surveillance between 1997 and 1999. Rates by race and by cause were calculated for the 13 states combined. Blood alcohol concentration (BAC) levels and PE use were compared between AI/AN and "other" races in a subgroup of these states.

Results: Compared with other races, AI/AN had the highest overall age-adjusted TBI hospitalization rate (71.5 per 100,000), though not significantly different. Rates were significantly higher among AI/AN than among whites for ages 20 to 44 years (78.5 per 100,000 vs. 54.7 per 100,000, $P < .0001$). MV incidents were the leading cause of TBI (40.1%) among AI/AN, and AI/AN injured in MV incidents had higher BAC levels (65.7% $\geq$ 0.08 g/dL vs. 31.6% $\geq$ 0.08 g/dL, $P < .0001$) and lower PE use (22.0% vs. 40.4%, $P < .0001$) than the "other" race group.

Conclusions: AI/AN have high rates of TBI hospitalization compared with other races. High BAC levels and low use of PE in MV incidents appear to be associated with the higher rates in this population. Further research is needed to ensure that approaches to TBI prevention, including efforts to increase PE use and promote responsible drinking behaviors, are relevant, acceptable, and can be implemented in AI/AN communities.

Learning Objectives: Describe the epidemiology of traumatic brain injury hospitalizations among American Indian/Alaska Natives compared with other population groups. Report the distributions of blood alcohol level and protective equipment use among American Indians and Alaska Natives hospitalized with a TBI. Discuss the implications of these findings for future TBI research and prevention efforts.

Poster 2593

Sports-Related Violence: Public Health Violence Issue or Just "Boys Being Boys?"

R Dawn Comstock, PhD[1,2], CL Knox MA[1], SK Fields, JD, PhD[3]

[1]Center for Injury Research and Policy, Columbus Children's Research Institute, Columbus OH; [2]The Ohio State University, College of Medicine, Dept of Pediatrics, Columbus, OH; [3]The Ohio State Univerisity, College of Education, Department of Physical Activity and Educational Services

Background/Objectives: Sports-related violence (hazing, foul play, and brawling) has not yet been acknowledged as a public health problem. Our objective was to review several highly publicized sports-related violence incidents.

Methods: We reviewed a case-series of sports-related violence incidents.

Results: Case 1: In 2003, hazing among high school girls' touch football players resulted in injuries to 5 girls including a broken ankle and a laceration requiring 10 stitches when younger players were slapped, punched, and covered in paint, mud, and feces.

Case 2: In 1998, hazing during a pro-football team's training camp resulted in injuries to 3 players including a bloody nose, blurred vision, and a laceration requiring 14 stitches when 5 rookies were forced to run a gantlet with pillowcases over their heads while veteran players hit them with bags of coins.

Case 3: In 1999, a 15 year-old high school hockey player pushed an opponent into the boards after the buzzer sounded, leaving him paralyzed.

Case 4: In 2004, a professional hockey player intentionally struck an opponent's head resulting in a broken neck and a concussion.

Case 5: In 2002, a collegiate football game ended in a brawl among players resulting in injuries to at least two players.

Case 6: In 2004, a pro-basketball game ended in a brawl involving players and fans resulting in injuries to nine fans. Litigation occurred in 5 of the cases.

Conclusions: Sports-related violence, an unstudied realm of violence, is an injury risk to athletes of all sexes, ages, and levels of competition. Like all forms of interpersonal violence, sports-related violence is preventable. Further research into this emerging field is needed to identify risk factors and potential preventive mechanisms.

Learning Objectives: Identify sports-related violence as an injury risk to athletes of all sexes, ages, and levels of competition; Begin to understand how preventive interventions may be used to reduce the rate of sports-related violence; Describe why sports-related violence should be acknowledged as a public health violence issue.

Poster 2599

Suicide and Intimate Partner Violence Among Low Income Urban Women

Andrea Gielen, KA McDonnell, J O'Campo, JG Burke

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Background/Objectives: This study describes rates of suicidal thoughts and attempts among a sample of low income urban women, and examines whether and to what extent they are associated with intimate partner violence (IPV).

Methods: A one-time interview was conducted with a sample 611 women living in an urban area, one-half of whom were HIV positive.

Results: Having thought about suicide was reported by 31% of the sample and 16% reported having attempted suicide. Rates of suicidal thinking varied significantly by HIV and IPV status, with women who were both HIV positive and abused faring worse. Relative to HIV-negative, nonabused women, HIV-positive abused women were 3.6 times as likely to have thought about suicide and 12.5 times as likely to have ever attempted suicide, even after adjusting for drug use, age, and income. Our findings that abused HIV-negative women were also at significantly elevated risk for these outcomes lends support to the conclusion that it is the experience of abuse that is associated with the negative outcomes.

Conclusions: Health care and service providers interacting with women who may be in an abusive relationships and/or HIV positive should routinely assess for suicide risk, which may need crisis intervention.

Learning Objectives: Describe the scope of the intimate partner violence problem; Identify the relationship between intimate partner violence, suicide risk, and HIV status; State at least one implication of this relationship for services to women.

Poster 2610

Educación de seguridad en el transito (EST): Developing Guidelines for Creating Traffic Safety Materials in Spanish

Magda Rodriguez, E Streit, C Miara

Education Development Center, Washington, DC

Background/Objectives: Motor vehicle crashes are the leading cause of death for Latinos ages 1-34, and the toll of traffic injury on Latinos is greater than on non-Latinos. Although reducing traffic injuries requires a comprehensive approach, one key component is the use of effective educational materials. While a wide variety of traffic safety materials are available in Spanish, at least one study revealed deficiencies in the cultural appropriateness of many of these materials. Thus, there is need for a tool to help develop culturally and linguistically appropriate materials.

Methods: With funding from AAA Foundation for Traffic Safety and NHTSA, EDC conducted a telephone survey of materials developed to describe all traffic safety educational materials in Spanish. Information collected included: content and audience, distribution and availability, development process, and method for writing and translating. EDC then developed Guidelines for Creating Traffic Safety Materials in Spanish, by seeking input from developers of educational materials, national and local work groups and existing documents on cultural competency.

Results: Survey: 190 Spanish-language educational materials were surveyed. The most common primary topic for educational materials was child passenger safety (44%) followed by pedestrian safety (11%). Ninety percent of items were translated from another language into Spanish, and only 10% were created originally in Spanish. Only 52% were evaluated, most with a process evaluation.

Conclusions: Most available Spanish-language educational materials are not culturally appropriate, especially on topics other than CPS. No guidelines currently exist for organizations that want to develop materials for Latinos. The guidelines being created will be a tool help developers provide materials that are accurate, easy to understand, and culturally relevant to their audience.

Learning Objectives: Learn the results of a survey that described content, development, and use of traffic safety materials available in Spanish; Learn key steps to develop effective materials for Spanish-speakers; Learn controversies and unresolved issues in developing materials for Spanish speakers.

Poster 2611

Age, Gender, and Temperament as Risk Factors for Pediatric Pedestrian Injury

David C Schwebel, PhD, Benjamin K Barton, MS

UAB Injury Control Research Center and Department of Psychology, University of Alabama at Birmingham, AL

Background/Objectives: Pedestrian injury is the second leading cause of traumatic pediatric mortality, killing roughly 10,000 American children annually (U.S. DOT, 2001), but researchers have a poor understanding of factors that place children at risk. Age, gender, and temperament were examined as risk factors for children's pedestrian injury risk in a safe, but contextually realistic environment.

Methods: Eighty-five children (mean 7.25 years; 53% male; 53% White, 37% African American) used traffic on a two-lane, bi-directional suburban street to cross an adjacent pretend crosswalk (Lee et al., 1987). Six pedestrian behaviors were recorded and averaged across five trials:

1. Latency waited before crossing
2. Looks left and right while waiting
3. "Missed opportunities," when safe crossing was possible but skipped
4. Latency between previous vehicle passing and initiation of crossing
5. Size of traffic gap chosen
6. Latency between safe crossing and subsequent vehicle passing

Four Child Behavior Questionnaire scales (impulsivity, inhibitory control [reversed], high intensity pleasure, and activity level; Rothbart et al., 1994) were aggregated to assess child temperament.

Results: Adjustments were made for traffic volume. Age, gender, and temperament were regressed onto each pedestrian behavior in a series of six analyses. Age significantly predicted pedestrian behavior in all analyses. Gender emerged in three: waiting latency, looking for traffic while waiting, and missed opportunities to cross. Temperament predicted gap size chosen and latency between safe crossing and the subsequent vehicle passing. Significant betas ranged from .20 to .30.

Conclusions: Age is a particularly good predictor of child pedestrian safety, although gender and temperament also contribute. Interventions to train children in pedestrian safety are urgently needed; we are currently expanding these findings to develop interventions using virtual reality.

Learning Objectives: Understand epidemiological data concerning risk for pediatric pedestrian injury; Identify the roles of age, gender, and temperament in pediatric pedestrian injury; Understand the utility of assessing children's pedestrian safety using a pretend crosswalk positioned adjacent to an actual road with traffic.

Poster 2612

Multiple Approaches to Understanding Young-Driver Crash Risk

Nancy Rhodes, PhD, D Brown, PhD, AS Edison, MS

University of Alabama, Tuscaloosa, AL

Background/Objectives: To gain a better understanding of the factors contributing to crash risk in young drivers, an extensive analysis of a database containing all crashes reported by law enforcement officers in the state of Alabama in calendar years 1999 through 2003 was undertaken. Of particular interest were DUI crashes of college-aged drivers (ages 19-23) and crashes resulting from risky driving behavior (e.g., following too closely, driving over the speed limit, failure to yield) among young drivers (ages 16-20).

Methods: An analysis of an archival database of crash statistics in Alabama was conducted that included all crashes reported by law enforcement in the state, including contributing causes and other attributes. Crashes involving risky behavior were compared for young (age 16-20) and older drivers (age 30+), and crashes among young drivers involving risky behavior were compared with those for young drivers not involving risky behavior. This basic analysis established the hypotheses for a wide range of further analyses in an attempt to get at root causes.

Results: Typical crashes among young risky drivers involved speeding on a county road and running off the road at a curve. These crashes are likely to occur with passengers in the car, increasing the likelihood of multiple injuries.

Conclusions: Results indicated that young drivers' behavior puts them at risk of injury and death due to some preventable causes that may be addressable both by traditional and innovative means. We are proposing to use these findings to guide a major research project on attitudes and norms surrounding driving behavior to develop effective countermeasures. For example, because passengers are involved in most risky crashes we will examine the peer influences in risky behavior.

Learning Objectives: Understand factors contributing to risk of crash in youth DUI; Understand factors contributing to risk of crash in unimpaired youth driving; Understand how analyses of crash databases can contribute to behavioral research approaches to risk identification.

Poster 2613

Parental Supervision and Child Pedestrian Traffic Gap Selection

David C Schwebel, PhD, BK Barton, MS

UAB Injury Control Research Center and Department of Psychology, University of Alabama at Birmingham, Birmingham, AL

Background/Objectives: Pedestrian injury is the second leading cause of traumatic pediatric mortality, killing roughly 10,000 American children annually (U.S. DOT, 2001), but behavioral scientists have a poor understanding of factors that place children at risk. Laboratory work suggests the presence of parents – even noncommunicative parents – causes temperamentally uninhibited children to make safer decisions than when unsupervised (Schwebel & Bounds, 2003). This study was developed to replicate laboratory findings in a more realistic pedestrian environment.

Methods: Eighty-five children (mean 7.25 years; 53% male; 53% White, 37% African American) used traffic on a two-lane, bi-directional suburban street to cross an adjacent pretend crosswalk without parental supervision and with a parent nearby (Lee et al., 1987). Size of traffic gap chosen was recorded and aggregated across five trials for each condition.

Parent-report Inhibitory Control was assessed using the Child Behavior Questionnaire (Rothbart et al., 1994).

Results: A repeated-measures ANOVA with temperament (uninhibited vs. inhibited) and age (5-6 years vs. 7-8 years) as between-subjects effects compared gap size selection in the unsupervised and supervised conditions. Main effects emerged for condition ($F(1, 78) = 6.08$, $p < .05$), temperament ($F(1, 78) = 5.03$, $p < .05$), and age ($F(1, 78) = 3.89$, $p = .05$).

A condition by temperament interaction also emerged ($F(1, 78) = 9.04$, $p < .01$). Post-hoc comparison suggested inhibited children behaved similarly in both conditions but uninhibited children chose safer gap sizes when supervised.

Conclusions: Results replicate laboratory findings using a more realistic pedestrian setting. Children most at risk for pedestrian injury – those with uninhibited behavior patterns – are safer when supervised. Findings have implications to child pedestrian training and intervention.

Learning Objectives: Understand epidemiological literature concerning the roles of age, temperament, and supervision in pediatric pedestrian injury; Understand why parental supervision is so critical to young children's pedestrian safety; Consider implications of the effect of supervision on at-risk children for pedestrian intervention development.

Poster 2615

Racial and Socioeconomic Disparity in Injury and Violence in Washington State

J Sabel, PhD, J VanEenwyk, PhD

Washington State Dept of Health, Olympia, WA

Background/Objective: Eliminating health disparities is a national Healthy People 2010 goal. The objective of this project was to describe health disparities related to race, ethnicity, education, and poverty for injury and violence (IV) in Washington State.

Method: We calculated age-adjusted mortality rates for five causes of IV (motor vehicle crashes, drowning, traumatic brain injury, suicide and homicide) by race and ethnicity using Washington State mortality data and single race data from the National Center for Health Statistics and Public Health–Seattle & King County. We defined four race groups: African American (AA), American Indian/Alaska Native (AIAN), Asian/Pacific Islander (API), and White, and Hispanic or non-Hispanic ethnic groups. We used 2000 U.S. Census data to measure poverty and education. For poverty, we assigned the decedent to one of four groups based on the percent of the population living at or below federal poverty level in the decedent's census tract. For education, we assigned the decedent to one of five groups based on the percent of people 25 years and older with a college education in the census tract.

Result: Mostly, API had the lowest and AIAN the highest mortality rates from IV. Hispanics had higher rates than non-Hispanics for motor vehicle deaths and homicide. Mortality rates increased as poverty increased and as educational attainment decreased.

Conclusions: There are marked racial, ethnic and socioeconomic disparities in IV mortality in Washington State. Differences in social and cultural norms, including risk-taking behaviors and preventive activities, and differences related to healthcare may provide partial explanations. More research is needed to further explain these differences and the relationships among race, ethnicity, and socioeconomic factors so that targeted efforts can be made to eliminate disparities.

Learning Objectives: Identify racial and ethnic groups with higher injury and violence mortality rates in Washington State; Describe how injury and violence mortality rates vary by poverty and educational level in Washington State; Explain how injury and violence disparities have changed over time.

Poster 2616

A Collaborative Educational Approach to Prevent Fire-Related Injuries to Denver Children

Phyllis A Ring, MBA

The Denver Osteopathic Foundation, Denver, CO

Background/Objectives: Fires resulting from children's play are the leading cause of residential fire-related death and injury among United States children ages 9 and under. Hospitalization rates for burn injuries in Colorado children under age six are 12.8/100,000 per year. The Denver Osteopathic Foundation's mission is to educate the public in matters of health and safety. Fire prevention education for young children in Colorado has historically been inconsistent and often sporadic. To address this problem, the Denver Osteopathic Foundation created a fire prevention program for Colorado children ages 4-6 attending school in the Denver metro area.

Methods: The Denver Osteopathic Foundation partners with firefighters, teachers and parents to educate children with an interactive, age appropriate program. The program covers the

following concepts: crawl low under smoke, get out and stay out, what is safe for play/keep away, and calling 9-1-1. The children's understanding and retention of the four concepts is evaluated with a post-test that does not require reading and is administered three weeks after the program. Teacher satisfaction is assessed by a three-item survey.

Results: Thus far, 4,500 children in 89 schools have received the program, and twelve fire departments in the area have participated. Eighty-three percent of the children identified the correct answer on the post-test pertaining to the "9-1-1" concept compared with 90% for the other three concepts. Ninety-five percent of the teachers who responded to the survey (63% response rate) ranked both the presentation and the materials as good or excellent.

Conclusion: Children showed an understanding of important fire prevention concepts following this program. The program is acceptable to both teachers and firefighters. The "9-1-1" curriculum needs to be re-examined to determine if there are ways to increase the children's understanding.

Learning Objectives: Describe an evaluation of an injury prevention program; Describe one example of a collaborative injury prevention intervention; Describe important concepts for the prevention of fire-related injury.

Poster 2617

Innovative Methods for Collection of Injury Data From Migrant and Seasonal Farm Workers

Lorann Stallones, MPH, PhD[1], SV Acosta MD, PhD[2]

[1]Colorado Injury Control Research Center, Department of Psychology, Colorado State University, Fort Collins, CO; [2]Division of Environmental and Occupational Health, University of Texas, TX

Background/Objectives: The goal of this project is to improve collection methods of migrant and seasonal farm workers work history including occupational hazards as well as occupational and motor vehicle related injuries. In this study, farm workers are people who are or have been temporally employed in agriculture; they may migrate or be hired locally on a temporary basis. Studies are being conducted with Colorado migrant farm workers and nonmigrating farm workers in Guanajato, MX to obtain in depth information about their cultural, social and health beliefs.

Methods: Ethnographic interviews were conducted among Colorado migrant farm workers (n=10) and farm workers in Guanajuato, México (n=5) in July, 2004. All interviews were conducted in Spanish, tape recorded, transcribed and translated into English. All participants were asked a standard set of questions related to injuries, perception of risk of being injured, prevention strategies about injuries, and source of medical care when injured. Interviews were coded and codes were grouped according to common subjects or ideas as part of the thematic analysis. Content analysis was performed to measure the occurrence of certain themes across the interviews. This was done by counting the frequency of various themes and ideas expressed in order to determine which themes were the most pervasive.

Results: Themes which were identified included: use of protective clothing, protective behaviors, self-efficacy in injury prevention; responsibility for injuries; and causes of specific injuries. In addition, concerns about burn and fall-related injuries were expressed by respondents.

Conclusions: In this population, avoidance of injuries was viewed as the responsibility of individuals and concerns about the impact of injuries on their families was the most salient reason for avoiding injuries.

Learning Objectives: Understand the utility of qualitative data collection methods in low literacy populations; Understand factors associated with injury risk perception among migrant and seasonal farm workers; Understand injuries of concern among farm workers.

Poster 2618

Understanding and Preventing Childhood Injury in Washington State

Jennifer Sabel, PhD, I Silver, MPH, D Pilkey, RN, MPH

Washington State Department of Health, Olympia, WA

Background/Objectives: In Washington State and throughout the nation, injuries are the leading cause of death for children over one year old. Research shows that most childhood injuries can be prevented. A recent report on childhood injury has been released in Washington State that highlights leading causes, identifies trends and disparities, and provides "best practice" prevention strategies. The goal of the report is to provide correct and consistent injury prevention messages to be delivered to the public by injury prevention professionals throughout the state.

Methods: For each major type of childhood injury, death and hospitalization rates are analyzed by intent, age and gender from 1999 to 2001, a time trend analysis was completed for

death rates, and data on the circumstances surrounding the deaths are summarized from community-based Child Death Review teams. In addition, prevention strategies are provided for parents, caregivers and the community. An analysis of leading causes of death and hospitalization, and a time trend analysis for death rates are also provided by age group.

Results: Motor vehicle crashes, suffocation and drowning were the leading causes of childhood injury-related deaths in Washington State. Infants, teens and males had the highest risk for injury-related death and hospitalization during 1999-2001. From 1981 to 2001, declines in injury-related death rates were seen for motor vehicle crashes, drowning, and pedestrian-related, and fire and burn injuries.

Conclusions: Despite the declines in the death rates observed for motor vehicle crashes and drowning, these are still among the top three leading causes of injury death for Washington State children. Injury prevention professionals have been provided with injury prevention strategies in a readable, useful format so that they can be easily shared with the public.

Poster 2619

Trends in Emergency Department Visits for Injuries by Middle-Aged Persons in the United States, 1993-2002

David A Woodwell, BA, LF McCaig, MPH

Centers for Disease Control and Prevention, National Center for Health Statistics, Hyattsville, MD

Background/Objectives: To describe trends in injury-related hospital emergency department (ED) visit rates in persons 45-64 years of age for selected diagnoses and causes of injury using data from the 1993-2002 National Hospital Ambulatory Medical Care Surveys (NHAMCS).

Methods: NHAMCS is an annual national probability survey of visits to emergency and outpatient departments of non-Federal, short-stay, and general U.S. hospitals. The sample consisted of 400 hospitals with EDs and patient records were completed for 2,200 to 4,500 injury-related ED visits among persons 45-64 years of age, each year. Data were weighted to produce national estimates. Two years of data were combined to provide more reliable estimates. Trends in selected diagnosis groups and causes were analyzed.

Results: The volume of injury-related ED visits increased 44% from 1993 to 2002 for patients 45-64 years of age. In 1993/94, the injury ED visit rate for this age group was 91 visits per 1,000 populations compared with 100 in 2001/02 (up 10%).s Rates increased for the following race and sex groups: black males (up 36%); black females (up 34%); white males (up 10%). Increasing trends were observed for the following diagnoses: spinal disorders (up 170%); rheumatism (up 155%); traumatic complications (up 145%), sprains (up 9%). Visit rates for adverse effects of medical treatment and intentional injuries increased by 151% and 77%, respectively.

Conclusions: NHAMCS is an effective tool for monitoring trends in injury-related ED visits. Injury-related ED visit rates for selected diagnoses may be expected to increase in the future as a result of the aging baby boomer population. Further intervention strategies may be needed to reduce intentional injuries and those caused by medical or surgical errors.

Learning Objectives: Describe trends in injury-related emergency department visits for patients 45-64 years of age; Identify the most common injury-related diagnoses made at emergency department visits for person 45-64 years of age; Identify the most common causes of injury seen at emergency department visits by patients aged 45-64 so that preventive measures can be developed.

Poster 2622

Unintentional Deaths Among Individuals Age <12 Years Old: A 10-Year Coroner-Based Review

Steven A Koehler, MPH, PhD, S Ladham, MD, A Shakir, MD, J Dominick, RN, CH Wecht, MD, JD

Allegheny County Coroner's Office, Pittsburgh, PA

Background: Unintentional injury is the leading cause of death among children and young people in the United States. A large number of these deaths are preventable. To date, few epidemiological studies have focused on describing these types of deaths, the frequency associated with fatal injuries during childhood, and efforts to identify preventive actions.

Methods: A 10-year (1994-2003) retrospective coroner-based review of all unintentional deaths, age < 12, and examined at the Allegheny County Coroner's Office (ACCO). The age, sex, race, circumstances, and cause of death were reviewed.

Results: A total of 433 deaths of children under 13 years of age were examined during the 10 year period indicating 124 (28.6%) of those fatalities were due to unintentional injuries.

Among these 124 deaths, 76 were male and 72 were white. The four leading mechanisms of death were blunt force trauma (BFT) (30.6%), fire related (24.2%), asphyxiation (20.2%), and drowning (18.5%). The majority of deaths under the age of one year were the result of asphyxiation. Between 1 and 5 years of age BFT and fires were the leading causes of death. Between the ages of 6 and 9 years, deaths were primarily due to BFT, drowning, and fires. The majority of deaths over the age 9 years were from BFT and drowning.

Conclusion: A forensic review of deaths among children showed that a majority could be considered preventable. Coroners/Medical Examiner offices should go beyond the determination of cause/manner of death and provide an important public health service to the community they serve. They should identify at-risk populations, the mechanisms associated with particular deaths, and suggest means to reduce and prevent such fatalities in the future.

Learning Objectives: Describe the causes of unintentional deaths among individual age <12 years old; Identify the leading mechanism of death by age; Identify areas of injury intervention.

Poster 2624

To Live and Die in Los Angeles: The California Fatality Assessment and Control Evaluation (FACE) Program: 1992-2002

Laura Styles, MPH[1], H Cierpich, BS[1], J Rogge, MD, MPH[1], D Higgins, MS, BSN[2], R Harrison, MD, MPH[1]

[1]California Department of Health Services, Oakland, CA
[2]NIOSH, Morgantown, WV

Background/Objectives: The California Department of Health Services, in collaboration with NIOSH, has established the California FACE Program for the surveillance and investigation of workplace fatalities in Los Angeles County. The objective of FACE is to prevent and reduce the severity of workplace injuries by identifying high-risk work situations, developing prevention strategies, and informing those who can intervene in the workplace.

Methods: The FACE program uses multiple sources of notification for the identification of fatal occupational traumatic injuries. FACE investigations target fatalities involving machinery, street/highway construction work zones, youth (under 18), and Hispanic workers. Recommendations for prevention are included in every investigation and disseminated to employers and workers nationwide.

Results: There has been a significant downward trend in both occupational fatality and homicide rates in Los Angeles County for the period 1992-2002, but this has not been the case for other causes of death (transportation, machine-related, and falls). The fatality rate for Hispanic workers was approximately 50% greater than it was for non-Hispanic workers (39 vs. 26 per 100,000 workers). Thirty-seven percent of all fatalities were homicide, followed by transportation (18%) and falls (12%). Among homicides, 45% were robberies, and 88% involved a firearm. Homicide was the leading cause of death for both male (36%) and female (51%) workers, and accounted for 87% of supervisors of sales occupations, 80% of security guard and 91% of cashier fatalities.

Conclusions: Homicides have been the leading cause of occupational fatalities for each year 1992-2002. Although overall fatality and homicide rates have decreased, deaths from other causes have not. Hispanic workers are at increased risk of dying on the job. The FACE program identifies risk factors in investigated cases.

Learning Objectives: At the conclusion of this session, the participant will be able to: Identify industries and occupations at highest risk for workplace fatalities; Describe the leading causes of death for these workers; List recommendations to prevent future occupational fatalities.

Poster 2628

Targeting Injury Prevention Community Education Using E-Codes

Janice Williams, MSED, R Schafermeyer, MD

Carolinas Medical Center, Charlotte, NC

Background: Community traffic safety interventions are rarely offered based on data as to the geographic neighborhood that is experiencing the biggest rates of injury within that area. Most interventions are instead targeted at the location of the crash.

Methods: Emergency department ICD-9 codes were collected and compiled into tables by injury area. The data was then geo coded with census data producing maps that depict geographically areas with the greatest rate of injury in each specific area.

Results: Specific interventions such as booster seat educational campaigns were targeted based on the communities having the greatest rate of injuries in each defined injury category.

Conclusions: Shifts in injury rates cannot be directly linked to targeted interventions, but the use of this information can offer organizations providing injury prevention interventions a way to target limited resources into the communities with the greatest risk. The data collected over time can also show shifts in injury patterns giving organizations a way to assess where services are needed. Limitations of the project include collection, coding, and funding capabilities of individual communities, injury data being reliant on physician ICD-9 coding, acceptance of community agencies in utilizing this data, and the use of ZIP codes in extrapolating data that may reach past identified boundary areas.

Learning Objectives: Identify what resources are needed to compile injury data to develop tables and maps; Describe what injury area and type of intervention can be targeted with this information; Develop a plan to pull together partners needed for the development of this project in their area from data collection through targeted intervention planning.

Poster 2643

Shaping the Millennium; From the History of Child-Home Injury in the United States, in Public Health Journals (1900-1975), to Applications of Leadership Systems

Les Fisher, Archivist APHA

Injury Control and EMS Service Section, S. Delmar, NY

Background: Using history, leadership systems, and personal reflections, the author assesses more than 120 articles on child and home injury prevention, published in Public Health Reports and The American Journal of Public Health, from the early 1900's to the creation of the American Public Health Association's Injury Control and Emergency Health Services Section in 1972.

Learning Objectives: The awareness of the resulting "bookshelf" on injury prevention personalities, events and values, overlaid by several modern leadership systems conceptual frameworks, may better interface on the continued progress of modern injury epidemiological and prevention systems. The understanding of interacting historical and four modern leadership conceptual framework systems can promote newer evidence- based crafts and skills. More applied research, in service training and professional education curricula on examples of historical leadership in injury control can guide continued personal and field growth during losses of institutional memory and downsizing of resources.

Poster 2646

Impact of CPK Correction on the Predictive Value of S-100B after Mild Traumatic Brain Injury

Jeffrey Bazarian MD[1], B Blyth MD[1], N von Ahsen MD[2], M Hasselblatt MD[3]

[1]University of Rochester School of Medicine, Rochester, NY; [2]University Hospital Goettingen, Goettingen, Germany; [3]Münster University Hospital, Münster, Germany

Objective: To determine the impact on predictive value of a correction factor for S-100B based on concomitant creatinine phosphokinase (CPK) levels.

Methods: The CPK- S-100B relationship in a previously published cohort of non-head injured marathon runners was used to derive a correction factor for the extracranial release of S-100B. This factor was then applied to a separate cohort of 96 mild traumatic brain injury (TBI) patients in whom both CPK and S-100B levels were measured. Corrected S-100B was compared to uncorrected S-100B for the prediction of initial head CT, three-month headache and three-month post concussive syndrome (PCS).

Results: Corrected S-100B resulted in a statistically significant improvement in the prediction of 3-month headache (area under curve [AUC] 0.46 vs 0.52, p=0.02), but not PCS or initial head CT. Improvements in AUC were due to improvements in specificity, not sensitivity. Using a cutoff that maximizes sensitivity (>90%), corrected S-100B improved the prediction of initial head CT scan (negative predictive value from 75% [95% CI, 2.6%, 67.0%] to 96% [95% CI: 83.5%, 99.8%]) but not of 3-month headache or PCS.

Conclusions: Using CPK to adjust for extracranial release of S-100B resulted in small improvements in outcome prediction after mild TBI. Given the poor overall predictive performance of S-100B, these improvements are unlikely to influence clinical decision-making. However, by increasing the proportion of mild TBI patients correctly categorized as

low risk for abnormal head CT, corrected S100-B has the potential to further reduce the number of unnecessary brain CT scans performed after this injury.

Learning Objectives: Describe how a serum marker, like S-100B could be used to improve the diagnosis of mild TBI and its complications; List 2 factors contributing to S-100B's lack of specificity; Describe how a correction factor based on concomitant CPK levels could improve S-100B's specificity.

Poster 2650

Rape Victims in the Emergency Department: Is the ED Prepared to Assist?

Stacy B Plichta, ScD[1],T Vandecar-Burdin, MS[1], R Odor, MSW[2], S Reams, AAS[3]

[1]Old Dominion University, Norfolk, VA; [2]Virginia Department of Health, Richmond, VA; [3]Virginia Sexual Assault and Domestic Violence Action Alliance, Richmond, VA

Purpose: This study explores the ability of emergency departments (ED's) in Virginia to assist survivors of sexual violence. A population based survey estimates that roughly 27,000 people per year are victims of sexual violence in Virginia. Sexual violence has both immediate and long-term health consequences, and appropriate early intervention is critical to the recovery of survivors.

Methods: All 83 ED's were surveyed via mail and telephone. Respondent ED's (RR 66%) were distributed proportionately across the state. Questions about available services and resources were based upon the AMA's recommendations, Department of Justice recommendations (SANE Nurse manual) and upon the input of an expert panel. The expert panel also reviewed and approved the final version of the survey.

Results: ED's serve an average of 36.5 victims per year (range 0-310). They generally report providing the recommended immediate care to victims of sexual violence, with most conducting a complete forensic exam or referring to a sister hospital. However, trained staff are lacking, with over half (58.7%) reporting they do not have a trained sexual assault nurse examiner (SANE/FNE) on staff at all and only 38% reporting that they have a SANE/FNE nurse available at all to victims. The majority do not screen for sexual violence unless it is suspected and rape-specific services are also lacking. Further, almost one-quarter (23%) do not have a relationship with their local sexual assault center. Training in sexual violence is an area where most ED's could improve, with 35% rating themselves as fair or poor. Almost half do not have a formal training plan in place, over half (55%) do not provide training to new staff and the great majority (85%) have not provided training to medical staff in the past year.

Conclusions: ED's in Virginia generally provide immediate medical care to victims that are in alignment with current recommendations, however many do not have staffs that are specifically trained in assisting victims of sexual violence. However, ED's report serving fewer victims than expected given estimates of the prevalence of sexual victimization in Virginia. There is a clear need to ensure that SANE/FNE staffs are available at every hospital and that medical staff are trained on a regular basis. There is also clearly room for improvements in screening, follow-up treatment and training. Further, the ED's might want to develop better linkages with other agencies that serve victims. State government can assist with policy changes and funding that encourages sexual assault crisis centers and law enforcement to partner with the ED's to help them provide the care necessary to victims.

Poster 2656

The Effects of Gang Awareness on Children's Psychosocial Functioning Above and Beyond Community Violence Exposure

Robin L Toblin, MA, KI Stevens, BA, D Schwartz, PhD

University of Southern California, Los Angeles, CA

Background: Previous literature finds that children exposed to community violence are at risk for emotional and behavioral problems. Though additional research demonstrates the influence of street gangs on children's development in inner-city neighborhoods, it is unclear what effects the mere presence of gangs in children's neighborhoods might have on their psychosocial functioning above and beyond community violence exposure. This study sought to segregate the effects of community violence exposure and gang awareness and predicted that gang awareness would contribute to additional increases in both anxiety and aggression.

Methods: We assessed approximately 300 children (mean= 9.5 years) using peer nominations and self-report measures. Gang awareness, community violence exposure, and anxiety were measured through self-report measures. Aggression was assessed through peer nominations. Using multiple linear regressions, we held community violence exposure

and gender constant in our analyses and examined the association between gang awareness and the outcomes of aggression and anxiety.

Results: Children who perceived a presence of gangs in their neighborhood were more likely to experience anxiety than those children who did not even when we statistically controlled for community violence exposure (ß=.20, p<.01). However, the association between gang awareness and aggression became nonsignificant when we controlled for community violence exposure.

Conclusions: The perception of gangs in a child's neighborhood exerts a negative impact on a child's emotional functioning above and beyond the effects of community violence exposure. This pattern does not hold for externalizing behaviors. This study highlights the nontrivial effects of neighborhood variables on children's functioning. In addition to ongoing gang prevention efforts, our data suggest that the media and schools should not sensationalize the impact of gangs on a neighborhood as it increases children's anxiety levels.

Learning Objectives: Identify gang awareness in the neighborhood as a distinct construct; Distinguish gang awareness from community violence exposure; Understand the contribution of neighborhood gang awareness to anxiety among children.

Poster 2657

Effect of Hospital Volume on Outcomes of Older Patients With Serious Injuries

David E Clark MD[1,2], MA DeLorenzo PhD[1]

[1]Maine Medical Center, Portland, ME; [2]Harvard Injury Control Research Center, Boston, MA

Background/Objectives: Prior studies give conflicting results about the effect of hospital experience with serious injuries on patient outcomes. Others have expressed concern that trauma centers are either underutilized or over utilized for older patients.

Methods: We analyzed Medicare fee-for-service records for patients aged >=65 with principal injury diagnoses (ICD-9 800-959, excluding 905, 930-939, 958) who were admitted to a hospital or died in an Emergency Department (ED) during 1999. Cases were classified by maximum Abbreviated Injury Score (AISmax), using diagnosis codes linked to ICDMAP-90 (Tri-Analytics, Baltimore); cases with isolated hip fracture (ICD-9 820) or AISmax<3 were excluded. The initial hospital (ED or inpatient) for each case was classified by its annual volume of inpatient cases meeting the above criteria. Medicare denominator data giving unique identification numbers and dates of death were linked to outpatient and inpatient claims data to follow cases from initial ED, through interhospital transfers, and after discharge. The effect of initial hospital size on 30-day survival (controlling for age, sex, and comorbidity) was modeled using logistic regression.

Results: 141,005 patients (99,163 AISmax=3; 35,903 AISmax=4; 5,939 AISmax=5) were managed in 4,485 hospitals. Interhospital transfers were mostly from the ED or on the first day, mostly from less experienced to more experienced hospitals, and more frequent with greater severity. For a given severity, survival of patients taken first to a less experienced hospital (and possibly transferred) was not significantly different from that of patients taken directly to a more experienced hospital.

Conclusions: Systems of trauma care allowing for interhospital transfer effectively triage older patients with serious injuries. Further studies of geographic or other systematic variations in hospital outcomes are warranted.

Learning Objectives: Describe interhospital transfer patterns for older patients with serious injuries; Evaluate effect of initial hospital experience on survival of older patients with injuries of differing severity; Understand strengths and weaknesses of linked Medicare data for injury research.

Poster 2662

Lessons Learned From Arizona's Promoting Healthy Relationships Project

Lucinda S Richmond, PhD, DJ Peterson, PhD, SC Betts, PhD

University of Arizona, Tucson, AZ

Background/Objectives: The Promoting Healthy Relationships Project addresses the issue of dating violence and encourages healthy relationships among Native American, Hispanic, and mixed ethnicity youth in four Arizona communities. The broad goal of the project is to implement and evaluate a culturally competent dating violence prevention curriculum within the context of a comprehensive positive youth development program.

Methods: The Safe Dates curriculum was used in all communities as the starting point for the development of a culturally sensitive dating violence prevention curriculum. However, to ensure cultural relevance, the curriculum was modified in each site. Just as the dating violence prevention curriculum was modified in each site, the youth development program is also tailored to meet the needs of each community. The program is implemented in schools and in community-based settings. Both qualitative and quantitative process and outcome evaluation were conducted.

Results: Although there was diversity in implementation across sites, some similarities were evident. For example, when the curriculum is implemented within a compressed time period (e.g., every day for two weeks), closer relationships developed among participants and program staff than when the program is implemented once a week for ten weeks. In addition, when project staff shared personal stories, a greater level of trust resulted in the groups.

Conclusions: In order for other communities to benefit from similar programming, lessons learned concerning the sustainability of community-based projects will be shared. Some of these include: hiring program staff directly from each participating community and/or culture; integrating culturally appropriate examples, language, and references into the curriculum; providing evaluation feedback via community-specific newsletters.

Learning Objectives: Participants will be able to: Describe each of the participating communities and their program models by highlighting both the similarities and the variations across sites; Describe the lessons learned concerning implementation and evaluation in each site; List factors contributing to program sustainability in these sites.

Poster 2666

Addressing Intimate Partner Violence in the Gay/Lesbian/ Bisexual/Transgender (GLBT) Community: Shelters as Prevention in a Public Health Approach

Linda Stopp, MPA

Graduate School of Public Affairs, University of Colorado at Denver, Denver, CO

Background: Shelter and other services are part of a public health response that addresses the life challenges of individuals experiencing intimate partner violence (IPV) by providing stability and safety. The additional services offered within the shelter are designed to help victims transition away from abusive situations and empower them. Shelter protects residents from additional IPV and can be the locus of educational outreach to the broader community. Thus shelter serves as a method of violence prevention.

Gay, lesbian, bisexual, and transgender (GLBT) victims of IPV are not afforded the same remedies or services as battered women. There are no specific shelters that would house GBT men, and mainstream shelters are not always friendly towards LBT women.

Methods: In this study, 101 surveys were collected from respondents recruited by service providers in the greater Denver/Boulder metro region. The surveys asked about experience with physical and emotional/psychological abuse, and asked if respondents had contacted resources or service providers for assistance after experiencing IPV and how helpful it was.

In addition, ten service providers were interviewed in depth to obtain qualitative information regarding their experiences working with GLBT victims of IPV and to elicit their ideas about the need for a separate and specific shelter.

Results: It was found that 71% of the sample had been physically abused and 75% emotionally abused. Being abused physically was highly correlated with being abused emotionally (Pearson Correlation of .775). Being abused physically and abused emotionally was also highly correlated with contacting service providers (Pearson Correlations of 0.406 and 0.405, respectively). Respondent gender identity and sexual orientation did not correlate significantly with the presence or absence of general physical and emotional abuse

experiences. Bisexuals appeared to receive the most abuse. Friends, family and the police were solicited most for help by respondents. Service providers generously supplied insights into their work and excellent recommendations.

Conclusions: The present author recommends a study of the implementation and evaluation of a specific shelter for GLBT victims of IPV from a public health perspective that incorporates evaluation of the efficiency, effectiveness, and equality of service provision and violence prevention.

Poster 2672

Enhancing State Capacity to Address Child and Adolescent Health Through Violence Prevention: Colorado's Collaborative Strategy

Jarrod Hindman, MS, S Breitzman, MA, J Vahling, MPH

Colorado Department of Public Health and Environment, Denver, CO

Background/Objectives: The Colorado Department of Public Health and Environment (CDPHE) recently received funding from the Centers for Disease Control and Prevention to conduct a statewide needs and resources assessment of child and adolescent violence in Colorado. Working collaboratively with the Violence Prevention Advisory Group (VPAG), a statewide strategic plan will be developed at the completion of the assessment.

Methods: Many prevention efforts narrow emphasis based on age, level of influence, or type of violence, suggesting that indicators for violent behavior or victimization operate independently according to program classification. Recent research suggests that the various types of child and adolescent violence may be better addressed by identifying risk and protective factors that are shared by different types of violence, resulting in a need to confront violence by integrating prevention efforts. Thus, CDPHE developed VPAG, consisting of violence prevention experts, state agency leaders, and members of private and nonprofit prevention groups, to assess current data, policy, programs, and community and political will, and to identify and obtain buy-in from stakeholders across the state.

Results: By reporting on the current needs and resources available in Colorado, CDPHE and VPAG intend to promote the integration of prevention efforts, suggest policy that emphasizes prevention, and identify research-based programs and strategies that address shared risk and protective factors. Statewide support for the effort is being acquired through the collaborative efforts of VPAG and a statewide stakeholders' survey, which is designed to obtain input regarding the direction of the project and to assess community readiness to implement and integrate prevention efforts.

Conclusion: The goal of the project is to create effective strategy that will be adopted statewide and have long-term implications regarding preventing violence among young people.

Learning Objectives: Identify how the CDPHE Injury and Suicide Prevention (ISP) and Child and Adolescent School Health (CASH) sections are collaborating on the project, and identify how the Violence Prevention Advisory Group was assembled; Further, define how VPAG's input impacts the project, and how they will influence the integration of child and adolescent violence prevention in Colorado; Describe Colorado's strategy to integrate child and adolescent prevention efforts by identifying shared risk and protective factors among the different types of violence; Identify strategy and available technology for acquiring stakeholder involvement and buy-in for integrated prevention efforts statewide.

Poster 2673

Serious and Fatal Fall Injuries in Alaska, 1991-2000

Mark S Johnson, MPA[1], M Moore, MS[2], Z Murphy, MPH[3]

[1]State of Alaska (retired); [2]State of Alaska, Juneau, AK; [3]State of Alaska, Juneau, AK

Background/Objectives: Fall injuries are a serious public health problem in Alaska. This study was done to determine the extent of serious and fatal fall injuries in Alaska from 1991-2000.

Methods: Data from the Alaska Trauma Registry (ATR) and the Alaska Bureau of Vital Statistics (ABVS) were reviewed for a 10-year period (1991-2000).

Results: During the years 1991 through 2000, there were 13,705 fall injuries recorded in the Alaska Trauma Registry, 166 of which were fatal. The Alaska Bureau of Vital Statistics reported 18 additional fall deaths without hospital involvement during the study period; the total number of hospitalized and fatal fall injuries in Alaska from 1991-2000 was 13,723. Alaska Natives/ American Indians were over 2 times more likely to

injure themselves by falling (396 per 100,000) than non-Natives (182 per 100,000); but at the same time, rural Alaskans were at greater risk for fall injuries than urban Alaskans. The estimated cost of hospitalization alone due to falls in Alaska during the study period was $157,619,000 or $15,761,900 per year.

Conclusions: Fall injuries are a serious public health problem resulting in pain, suffering, disability, death, and significant medical and non-medical costs. Older Alaskans (70+) experienced much higher fall rates than younger Alaskans. Most of the Older Alaskan falls resulted in fractures, particularly hip fractures. This study suggests the need for future surveillance studies to help determine causes of serious fall injuries among different population groups and observation studies to investigate the effectiveness of fall prevention programs.

Learning Objectives: Participants will be able to identify the most common place where Alaskan fall injuries occur and the most common types of Alaskan fall injuries. Participants will be able to describe at least two risk factors for fall injuries. Participants will be able to discuss at least two different types of additional research studies for fall injuries.

Poster 2675

Healthcare Needs of Children in a Domestic Violence Shelter: (A Pilot Study)

T Babineau, MD[1], Stacy B Plichta, ScD[2], E Schukraft, MA[2]

[1]Eastern Virginia Medical School, Norfolk, VA; [2]College of Health Sciences, ODU, Norfolk, VA

Purpose: This study examined the current medication status, acute and chronic healthcare needs of children seen by a family medicine MD while living in a domestic violence shelter. Women and children living in domestic violence shelters have a unique set of circumstances and needs. Health care needs of women in shelters is a growing area of research, as well is the healthcare needs of homeless people and their children, however there is a lack of available research pertaining to the specific needs of children that are, with their mothers, made homeless through domestic violence.

Methods: 71 children were seen by a family medicine MD and residents who work in an urban shelter one day each month. Their medical records were abstracted with no identifiers and entered into an SPSS dataset. Children were predominantly African American (76%) with an average age of 5.63 years (67% are 7 or under). On average, it had been 5 months since their last visit to a doctor. 61.4% are reported to have some form of insurance or medical coverage. This study was approved by the Medical School IRB (ODU IRB?)

Results: 35.2% of children were currently taking medication, with the most prevalent being asthma medication (19.7%). Other prescription medications taken by these children include analgesics, GI medication, ADHD medication and Psychiatric medications. 19.7 of the children have a medical history (not sure how to phrase this variable). 2.8% have a history of trauma, 8.5% have undergone a surgical procedure and 14.1% have had some other form of past history (again, wording) including lead poisoning, multiple ear infections, and pneumonia. 33.8% of the children have a chronic medical condition with the most prevalent being asthma (21.1%). Other chronic conditions noted include seizure, ADHD, behavioral/anxiety and eczema and allergies. Presenting complaints were recorded, the most common being upper respiratory infections/ear infections at 47.9%. The second most prevalent presenting condition was a rash or dermatologic condition at 16.9%. Other noted presenting conditions include asthma, gastrointestinal, allergies, and well child visits.

Conclusions: In many ways, children in domestic violence shelters share characteristics with other children that are homeless. Literature surrounding the healthcare needs of homeless children reports that revenant health issues for this population are URI's and dermatological problems. Additionally incidence of trauma, developmental delays and chronic disease such as asthma and gastrointestinal problems are common among homeless children. These results confirm the similarities in the two, nonmutually exclusive populations and indicate a need for further research in this area.

Poster 2680

Insulin-Like Growth Factor-I Prevents Learning/Memory Impairment in Injury and Disease

Douglas N Ishii, PhD, EJ Bluhm, SB Lupien, PhD, EA Brownson, PhD

Colorado State University, Department of Biomedical Sciences, Fort Collins, CO

Background: Learning/memory (LM) impairments occur under various circumstances including head injury, Alzheimer's Disease (AD) and diabetes. The average care cost is approximately $36,000 per patient in severe dementia. More than 4 million USA patients have dementia. These

numbers are rapidly rising due to the increasing average age of the population and epidemic in diabetes, posing a difficult challenge to public health resources. New treatments are urgently needed.

Objectives/Conclusion: Insulin-like growth factors (IGFs) support the nervous system. IGF and its receptors are present in brain. The hypothesis that brain IGF contributes to LM was tested. Anti-IGF antiserum or pre-immune serum was infused into the lateral brain ventricles. LM was significantly impaired in anti-IGF vs. pre-immune serum treated rats in a passive avoidance device. IGF gene expression is reduced in diabetes, and we tested the hypothesis that treatment with IGF can prevent impaired LM. Diabetic rats were implanted with subcutaneous pumps that released either vehicle or IGF-I. LM in the Morris water maze was significantly impaired in diabetic vs. nondiabetic rats. Such impairment was significantly and entirely prevented by IGF despite unabated hyperglycemia. MRI shows brain atrophy in diabetic patients, and the biochemical pathology associated with brain atrophy in diabetic rats was investigated. It is known that IGF levels slowly decline with aging, elderly subjects with lower vs. higher IGF levels do more poorly on LM tests, and there is a diabetic environment in the brains of AD patients. Further, IGF treatment can prevent cognitive impairment following experimental concussion. Taken together, these data show that IGF normally supports learning/memory, and IGF administration may prevent or treat cognitive impairment in injury and disease. (Supported by CDC grant number R49/CR811590 and NIH grant 1T32NS43115).

Learning Objectives: Describe incidence of learning/memory disorders in injury and disease; Describe cost of treatment of learning/memory disorders; Outline neurobiology of insulin-like growth factors; Describe data showing IGFs can prevent learning/memory impairment in injury and disease.

Poster 2685

Evaluation of the Pueblo, Colorado, "Smart Roads" Program to Decrease Alcohol-Impaired Driving

Richard Compton, PhD[1], A Berning, MS[1], Ralph Jones[2], C Rodriquez-Iglesias[2], E Cyr[2]

[1]National Highway Traffic Safety Administration (NHTSA), Washington, DC
[2]Mid-America Research Institute, Winchester, MA

Background/Objectives: In 2001, motor vehicle crashes were the leading cause of death in the United States for those 4 to 33—alcohol plays a role in many of these crashes. In 2003 there were 17,013 alcohol-related fatalities and the highest percentage of drivers with a blood alcohol concentration of .08+ was for drivers 21-34 years. These drivers are one of NHTSA's crucial target groups in the effort to decrease alcohol-related fatalities. The objective of this study was to examine a community-based program aimed at reducing alcohol-related fatalities for young adults. Pueblo, Colorado's, "Smart Roads" program was selected.

Methods: "Smart Roads" includes a focus on blue-collar workers and includes an education program on personal control, consequences, perceptions, and behavioral beliefs. The program is offered free to firms with blue-collar workers. The study examined nighttime injury (NI) and nighttime single-vehicle injury (NSVI) state crash data. Both NI and NSVI crashes served as surrogate measures of alcohol crashes.

Results: NI crashes for 21-34 year olds as a percentage of all crashes involving that age group decreased from 10.9% to 6.2% after the program (p=.041). Similar results were found when data from Pueblo was combined with surrounding counties. NI crashes for 21-34 year olds as a percentage of all crashes involving that age group decreased from 13.2% to 9.7% (p=.004). For NSVI crashes in Pueblo and surrounding counties, there was a decrease from 8.0% to 6.9%, with a slight increase in comparison counties—these changes were not significant.

Conclusions: "Smart Roads" demonstrated positive results on drinking and driving surrogate measures. Other communities may benefit from implementing similar community-based programs focused on 21-34 year old blue-collar workers.

Learning Objectives: Identify the leading cause of death in the U.S for people 4 to 33; Describe Pueblo's approach for decreasing impaired driving for young adults; Understand the effectiveness of Pueblo's program in terms of impacting drinking and driving.

Poster 2691

Broadening the Acceptance and Use of Ski and Snowboard Helmets

Elaine Frank, MHS[2], R Siegel, MSEd[1]

[1]Injury Prevention Program, NH DHHS, Concord, NH
[2]Injury Prevention Center at Dartmouth, Lebanon, NH

Background/Objectives: Research from the CPSC indicates that 44% of head injuries related to skiing and snowboarding could be mitigated with helmet use. Observations conducted in 1998 at NH ski areas showed helmet use was extremely low. NH SAFE KIDS undertook a project to increase helmet use.

Methods: The project included: developing and disseminating printed and video materials to school-based ski programs and parents on the benefits of helmet use, locating partners willing to make low-cost helmets available, and implementing ski area helmet displays. Evaluation has included measuring numbers of helmets sold and observational helmet use surveys at ski areas. Observations include estimated age, whether helmet is being used and, since 2003, whether they are skiers or boarders. Further evaluation is needed to determine the number of school-based programs that are utilizing these tools and the extent to which helmet use is related to reduce head injuries.

Results: In the first year, 1630 helmets were ordered through this program. This led to the adoption of the low cost helmet program by national injury prevention organizations. In addition, ski area surveys conducted since 2000 have shown a steady increase in helmet use amongst all age groups with the largest gains among those less than 12 years old. Written materials are sent annually to all NH schools.

Conclusions: Combining education and making low-cost effective safety devices available increases their adoption. The extremely rapid increase in ski and snowboard helmet use has far outpaced the change in helmet use among bicyclists. Further study is needed to understand and utilize this difference. Further efforts should be made to develop and implement policies for schools and ski areas requiring helmet use.

Learning Objectives: Understand the head injury risks of skiing and snowboarding and the role of helmets in prevention; Outline a model for developing and implementing a low-cost program to increase helmet use among skiers and snowboarders; Recognize steps for broadening the effort beyond the local level.

Poster 2697

Evaluation of the Prevent Alcohol and Risk-Related Trauma in Youth (PARTY) Program in One Community: Results and Future Directions

Marilyn Leff, MSW, MSPH[1], K Lindhorst, RN, BSN[2], L Stallones, MPH, PhD[1], J Gibbs-Long, BS[1]

[1]Colorado Injury Control Research Center, Colorado State University, Ft Collins, CO; [2]McKee Medical Center, Loveland, CO

Objectives: Prevent Alcohol and Risk-Related Trauma in Youth (PARTY) is an ongoing injury prevention program for adolescents at McKee Medical Center, Loveland, CO, in cooperation with local schools, police department, and the corner's office. The goal of this presentation is to outline the program, summarize results of the participants' evaluation and to discuss ways this evaluation could be broadened.

Methods: From October, 1999 through May, 2004, 102 PARTY sessions involving 4,080 students were held. Students were given a pre-test about their attitudes and experiences related to substance use and injury. After completing the program students completed an evaluation of the program and re-answered the attitude questions. Segments of the program were evaluated on a 5 point scale with 5 being the highest rating.

Results: Close to 60% gave the program the highest rating. Survivors discussing their experiences was rated the most helpful and the touring of hospital facilities as the least helpful program components. Comparison of pre- and post-test questionnaires showed most improvement in areas related to participants' interaction and responsibility toward their friends. Changes included not allowing friends to pressure them into taking risks, feeling that it is important to encourage friends to wear seat belts and feeling comfortable calling someone if they find themselves in a dangerous situation. Qualitative analysis of open-ended questions confirmed this finding.

Discussion: This evaluation which is easy and inexpensive was helpful in providing immediate feedback. More information is needed on the long-term efficacy of the program. Discussion will include options being considered for such long-term evaluation which could be within reach of community programs. Examples include focus groups with participants at appropriate intervals.

Learning Objectives: Describe the objectives and methods of the PARTY Program; Describe the current means of evaluating the program and results based on that evaluation process; Identify ways to enhance the evaluation process of this program and similar community programs.

Poster 2706

Gender Differences in Physical and Psychological Violence Victimization and Perpetration within Dating Relationships and Same-Sex Peer Relationships

Monica H Swahn, PhD, TR Simon, PhD, I Arias, PhD, RM Bossarte, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: Substantial gender differences exist in adolescents' reports of their use of violence. These gender differences may be attributed, at least in part, to the different measures used to assess violence within dating versus same-sex peer relationships. Existing scales, designed to measure physical and psychological violence within dating relationships, were modified to also assess violent behavior within same-sex-peer relationships. The present study examined gender differences in the patterns of perpetration and victimization of physical and psychological violence within dating (same-sex or opposite-sex) relationships and within same-sex peer relationships using identical scales for each type of violent behavior.

Methods: Data were obtained from the "Student Health and Safety Survey," conducted in 2004, and administered to all public school students enrolled in grades 7, 9, and 11/12 (N=4,131) in a high-risk school district. The current analyses were restricted to adolescents who reported dating in the past year (n=2,972).

Results: Girls were significantly more likely than boys to report physical violence perpetration within dating relationships (30.3% and 18.6%, X2 =42.52; p<0.0001). Additionally, boys were significantly more likely than girls to report physical violence victimization within dating relationships (32.6% and 28.8%, X2 =4.77; p<0.05) and physical violence perpetration (32.8% and 27.3%, X2 =9.85; p<0.01) and victimization (37.0% and 29.5%, X2 =17.53; p<0.0001) within same-sex peer relationships. Gender differences varied by grade.

Conclusions: Gender differences in dating violence and same-sex peer violence perpetration emerge in 9th grade and remain in 11th /12th grades indicating that efforts to reduce both dating and same-sex peer violence need to include both boys and girls and be implemented by 7th grade if not earlier.

Learning Objectives: Understand the utility and feasibility of assessing dating and same-sex peer violence using identical measures; Describe the patterns of violent behavior within dating and same-sex peer relationships among adolescents; Recognize the importance of gender and developmental stage for the design and implementation of violence prevention programs for adolescents.

Poster 2718

Suicide Prevention: Determining the Importance of Place

Christian L Hanna, MPH

Children's Safety Network, Marshfield, WI

Background: The occurrence of suicide varies among different demographic groups. Age and gender dominate the attention of suicide prevention research, practice, and policy initiatives. Place of residence, or geographic location, is not considered as a source of suicide behaviors as it is in other countries.

Methods: Information was based on examination and summary of the literature and register-based suicide data by geographic place.

Results: Identifiable suicide risk patterns emerge based on geographic place for people living in rural states and communities in the United States.

Conclusion: Preliminary evidence demonstrates geographic patterns associated with suicide in rural places. Prevention initiatives on population density may contribute to the reduction of suicide and suicide behaviors in rural places.

Learning Objectives: Describe contribution of place to suicide; Understand the basic premise of suicide by place; Learn modifiable factors relevant to reduction in suicide in rural places.

Poster 2719

Strike Out Child Passenger Injury

Beverly K Miller, MEd, HM Terry, SL Hodges, ME Aitken, MD, MPH, LM Henderson, SH Mullins, JL Oldani

University of Arkansas School for Medical Sciences, Little Rock, AR

Background: Booster seat use for children ages 4 - 7 years reduces the risk of serious injury and death by 59%. Many children of these ages are restrained by seat belts designed for adults. Interventions to increase booster seat use have mostly been conducted in urban communities as community-wide, multi-faceted educational and outreach campaigns. Strategies have not been widely tested in rural communities.

Methods: The pilot targeted children through instructional baseball programs in a rural area. A combination of educational and outreach strategies grounded in Social Marketing Theory were used, including promotion by local champions, coalition development, capacity building, local print media, passive education. Five teams in two rural communities participated in Strike Out events during practices and games over nine-weeks. Siblings through age 15 were also assessed for restraint use.

Results: Eighty-five children participated in some project component; 50% of these children were provided with seats through check up events. Preliminary analysis indicates no statistically significant overall behavior change after the intervention, although small sample size precludes conclusive outcome evaluation. Subgroup analysis is underway. Process evaluation yielded recommendations for in the timeline and verified active endorsement by the coaches as critical. An unanticipated result was the development of a coalition to continue CPS activities in the community.

Conclusions: A pilot of a novel booster seat intervention targeting children in instructional baseball programs was successful in increasing community capacity for continued CPS activities and was enthusiastically embraced by the community. Program effectiveness in changing knowledge and observed restraint use will be further assessed in a larger study. Support and involvement of the team coaches was identified as a critical element in team participation and behavior change.

Learning Objectives: Identify core implementation components of project; Recognize consumer processing theories used in model design; Appreciate the potential of simple interventions that can be implemented through community-supported sports programs.

Poster 2720

A Synthesis of the Economic Burden and Economic Evaluation Literature within Fatal and Nonfatal Suicide

William Rhoads, P Corso, A Thompson, G Kalra

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Objective: This study's objective is to synthesize the economic burden and economic evaluation literature for fatal and nonfatal suicides and associated prevention interventions. By compiling and summarizing the results of the current state of the literature, this study attempts to expose current literature gaps, describe potential reasons for literature gaps, and recommend where further economic research is needed in violence prevention.

Methods: A systematic review of the literature was conducted through standardized search engines, bibliographic review, and consultation with subject matter experts. Abstracts were reduced through predetermined criteria, from which included studies were summarized according to target population, time frame, economic evaluation method, per unit costs, effectiveness outcomes and economic summary measures. All costs were converted to 2002 U.S. dollars for comparability.

Results: Following the initial literature search and abstraction review, 19 economic burden articles and 2 economic evaluation articles met inclusion criteria. Non-fatal suicide medical costs ranged from $549 to $111,965 per case. Fatal suicide medical costs ranged from $631 to $37,382 per case. Productivity losses range from $42,621 to $537,346 per case for non-fatal suicide and from $281,726 to $1,000,000 per case for fatal suicide.

Economic evaluations of 2 suicide prevention interventions showed no significant differences in medical costs between treatment and intervention groups 12 months post intervention.

Conclusions: Little standardized information on the costs of fatal and nonfatal suicide exists and fewer economic evaluations of suicide prevention strategies are available. This may be due to the lack of evidence of program effectiveness, a lack of understanding of economic evaluation methods, or the inability to track long term outcomes associated with violence prevention.

Learning Objectives: Interpret the differences of economic evaluation summary methods in the violence literature; Describe the state of the economic literature in violence; Explain why economic evaluation is important in violence research, intervention implementation, and policy decisions.

Poster 2732

Head Injuries in Skiers and Snowboarders

Mark W Greve, MD[1], DJ Young, MD[1], LC Degutis, DPH[1], AL Gross, MD[2]

[1]Yale School of Medicine, New Haven, CT; [2]Denver Heath and Hospital Authority, Denver, CO

Objectives: Traumatic brain injury is the leading cause of death in skiers and snowboarders. While helmets have come into common use, no studies have assessed the effectiveness of helmets in reducing head injuries in skiers and snowboarders. Terrain parks are dedicated areas within ski areas with terrain features used for acrobatic maneuvers. Their use has been suspected to result in greater injury rates than regular ski runs, but this has not been well-documented.

Methods: This was a retrospective cohort study. Medical records from five ski resorts were examined for frequency of helmet use, terrain on which injuries occurred, and the effect of injury event type and helmet use on loss of consciousness (LOC) and head injury. The study period was July 2002 to July 2004. Eligible subjects were skiers and snowboarders who sustained a head injury as defined by ICD-9 code. Data elements included event location, mechanism of injury, helmet use, loss of consciousness, presence of neurological symptoms, GCS, and initial outcome. Data were entered into SPSS for analysis.

Results: 604 subjects were included in the analysis. 46.9% of subjects were skiing, 47.4% snowboarding. Most (68.7%) were using a ski run, while 20.5% were at a terrain park when their injuries occurred. 38.4% were wearing helmets. Helmet use did not affect the occurrence of LOC. 24.5% of skiers on a ski run had an LOC vs. 48.3% of skiers at terrain parks ($p<0.001$), and was not related to helmet use.

Conclusions: While helmets may decrease the occurrence of serious head injuries in skiers, there is an increased risk of head injury, regardless of helmet use, at terrain parks as compared to ski runs.

Poster 2738

Innovative Approaches to Dealing With Practical Constraints in Evaluating a School-Based Suicide Prevention Program

Konstantin Cigularov, MS[1], P Chen, PhD[1], BW Thurber, MSW, MPA[2], L Stallones, MPH, PhD[1]

[1]Department of Psychology, Colorado State University, Fort Collins, CO; [2]Suicide Resource Center of Larimer County, Loveland, CO

Background/Objectives: We evaluate a school-based suicide prevention program, Raising Awareness of Personal Power (RAPP), by using three evaluation approaches simultaneously: the rolling group design, the internal referencing strategy (IRS), and the minimum competency evaluation approach.

Methods: Four-hundred-seventy-nine students completed a randomly distributed pretest of either form A or form B (238 and 241, respectively), received a RAPP presentation, and completed a posttest of the same form. Form A contains a knowledge test and form B, efficacy of intervening suicidal peers. Half the classes in each sample were randomly assigned as either the treatment groups or the control groups. Based on the rolling group design, we were able to compare the pretest of the control groups to the posttest of the treatment groups. We also used the IRS approach to demonstrate mean differences on trained contents. Additionally, null difference should be substantiated on relevant items which were not covered in the RAPP. Finally, performance on post-test knowledge items was compared to a target performance level preset by the organization.

Results: Students in the treatment group showed significant gains in relevant knowledge and significantly more positive beliefs as compared to controls. Furthermore, positive effects on trained-relevant items were found. As expected, there was no change on untrained-relevant items. Performance on most trained-relevant knowledge items also reached the target level.

Conclusions: The RAPP program was effective not only in producing positive change in participants' knowledge and beliefs about suicide, but also in reaching a desired knowledge level determined by RAPP administrators. The rolling group design, IRS, and competency evaluation approaches were effective and practical substitutes for the formal experimental design in assessing a school-based suicide prevention program. Implications for program evaluation are discussed.

Learning Objectives: Understand how to use the rolling group design to effectively evaluate suicide prevention programs in schools. In the rolling group design, all groups of individuals (high school classes in our study) receive training at different times and provide pre- and post-training data. Groups that eventually will receive training can serve as a control group until they too receive training; Understand how to use the internal referencing strategy (IRS) to effectively evaluate suicide prevention programs in schools. The IRS is a pre-post single group design in which the evaluator intentionally includes in the pre- and post-measures relevant items which are covered in the training and relevant items which are not covered in the training. Effectiveness is inferred when pre-post changes on trained items are observed as well as no change between pre-post tests on untrained items. Understand how to use the minimum competency approach to effectively evaluate suicide prevention programs in schools. This approach requires only post-training performance data which is compared to a pre-determined target performance level expected by the program administrators.

Poster 2740

Implementation of the National Violent Death Reporting System: Maryland's Perspective

George Thorpe, MD, MAS, T Serpi, MS

Department of Health and Mental Hygiene, Baltimore, MD

Background/Objectives: The Maryland Violent Death Reporting System (MVDRS) is a surveillance system operated by the state's health department under the specifications and requirements of the National Violent Death Reporting System (NVDRS). Objectives of this project are to acquire and link information on all violent deaths from death certificates, medical examiner reports, police records, supplementary homicide reports, and crime lab reports to form a comprehensive, standardized surveillance system. Systematic reviews and evaluation of the surveillance system improve the accuracy and completeness of the surveillance data.

Methods: Violent death is defined as a homicide, suicide, death of undetermined intent or any firearm-related death. Data on all violent deaths are entered into a CDC-created software package, which relates information from all sources. When available, digital data are directly imported into the MVDRS system. Additional data are collected by hand review and abstraction of individual files.

Results: The results are a comprehensive surveillance system that describes the victims, suspects, nature and circumstances surrounding incidences of violent death. This is the first surveillance project in Maryland which attempts to link data from these sources.

Conclusions: The MVDRS is a timely, comprehensive and detailed data system that is more useful than any existing single-agency system. Data from this system will be used to produce detailed statistical reports on the incidence and characteristics of violent deaths that will demonstrate the utility of data generated by a state participating in the National Violent Death Reporting System. During this presentation, the MVDRS structure will be discussed, along with barriers to implementation and challenges in establishing such an extensive data surveillance system in Maryland. Preliminary data will also be presented from the MVDRS system.

Learning Objectives: Describe the approaches Maryland uses to link data to participate in the National Violent Death Reporting System; Delineate the problems encountered in creating the MVDRS; Discuss effective uses of the MVDRS surveillance data.

Poster 2747

Lessons Learned From Shaken Baby Syndrome (SBS) Intervention Project

Arleymah Raheem, MPH, J Mesfin, MPH, L Dawson

Georgia Division of Public Health, Injury Prevention Section, Atlanta, GA

Background/Objectives: The Injury Prevention Section (IPS) implemented a prevention pilot project in two county health departments, to educate parents about coping with crying, and the dangers of shaking a baby. The project adapted a strategy that was collaboratively developed to prevent SBS and other types of physical abuse to infants by focusing on the stresses of caring for a crying baby. The IPS education program trained the pediatric staff to give counseling to parents and help them adopt stronger coping skills. The pilot reached 300 parents in three months.

Methods: The pilot project utilized a "static-group comparison" evaluation model to determine the success. The evaluation component was achieved with a telephone survey to all parents who consented, asking about their knowledge and understanding of normal crying behaviors in babies. Both groups of parents were surveyed on their understanding of the injuries and consequences of SBS; however, the first group

was surveyed without receiving the counseling or specialized educational materials (reminder postcards, magnets). The two groups were compared for their responses to the evaluation survey.

Results: There was a notable increase in the percentage of parents who understood the injuries resulting from shaking a baby, would call someone if they felt overwhelmed, and would educate others who care for their baby. Survey results indicated that nearly all parents felt the crying education to be useful, especially for first-time parents.

Conclusions: Several research design flaws became apparent during implementation, including the absence of an agreed-upon, functional definition of SBS. The IPS Advisory Group recommended convening a professional council to create a definition. IPS plans to extend the project to other county health departments over the next year.

Learning Objectives: Identify circumstances leading to infant injuries from shaking and the consequences; Describe alternate strategy for educating about Shaken Baby Syndrome; List useful methods to reach parents and caregivers of infants.

Poster 2750

Nurse Home Visiting Model Utilizes Technology to Maximize Effectiveness and Reduce Costs

Ben Cooper[1], M Lutenbacher, PhD[2], T Woodard, MFT[3], P Temple MD[4], S Rohrbach, RN[1]

[1]Nurses for Newborns, St. Louis, MO; [2]Vanderbilt University, Nashville, TN; [3]BCA-CITS, Atlanta, GA; [4]Vanderbilt University, Nashville, TN

Background: The integration of computerized medical records and point of care tools in healthcare delivery has evolved over many decades. Nurses for Newborns Foundation is a leader in integrating computer information systems into their home visits to high risk mothers and young children. Since inception visit details and outcomes have been tracked utilizing technology.

Methods: Nurse visitors use laptop computers programmed with a customized electronic medical record to maintain individual client records while in the field. They collect assessment data and relevant client information to track progress toward achieving objectives. Nurses periodically synchronize their computers and transmit data to the office file server. Software functions include drop menus with cues for specific protocol activities for each visit, clinical data validity checks, and error reports generated for each client to identify missed or illogical data. Nurses are able to receive new case information thus eliminating any need to travel to the central office. Detailed client reports and summary reports are readily generated containing valuable, real-time information, via any secure web browser. The Foundation maintains HIPAA compliant electronic files with multiple levels of password protection.

Results: Utilizing technology, Nurses for Newborns has been able to track successful outcomes for over 26,000 families in 53 Missouri and Tennessee counties, Washington, DC and Maryland. Using this state of the art computer system has greatly reduced administrative costs. It also facilitated the development of a research infrastructure that enhances the connection between practice and science.

Conclusion: Using technology such as this within the field of home visitation offers a model for continuous quality improvement that can increase effectiveness and reduce injury, while reducing program costs.

Learning Objectives: Identify ways in which technology can decrease administrative costs; Describe the Nurses for Newborns custom-designed computerized database; Understand how databases can reduce error and assist in outcome measurement and reporting.

Poster 2756

Risk Factors Contributed to Elder Suicides in Oregon: What We Learned From the National Violent Death Reporting System (NVDRS)

Lisa M Millet, X Shen, MA Kohn

Injury Prevention and Epidemiology, Oregon State Department of Human Services, Portland, OR

Background: Oregon's suicide rate ranks 11th in the nation. The elder suicide rate in Oregon was 50% higher than the national rate in 2002. Although the magnitude of the problem has elevated it to a public health concern, little is known about risk factors. The data of Oregon's NVDRS were analyzed to identify risk factors.

Methods: Based on the death certificates, medical examiner's reports, and relevant documents in law enforcement data system, NVDRS collects, abstracts, codes and stores all information related to violent deaths. In this study, all deaths categorized as suicide on the death certificate are extracted from the data system and analyzed.

Results: A total of 125 suicides among individuals aged 65 years and over were identified in 2003. Of 125 deaths, 123 victims were residents of Oregon. The elder suicide rate in Oregon was 27.1/100,000. Men (53.9/100,000) were nearly 8 times more likely to die by suicide than women (7.0/100,000). A firearm was involved in 78% of cases. Fifty-eight percent of the victims were reported to be currently depressed and less than one-third of them were treated for depression. Over 80% of suicides were noted as having physical health problems. Thirty-seven percent of suicides disclosed their intention to commit suicide before they died; 30% of suicide victims left a suicide note and approximately 4% of the suicides had a previous suicide attempt.

Conclusion: Male gender, physical and mental illness, and access to lethal means are factors associated with suicide among elderly Oregonians. The state will develop and implement strategies to target the elder males at risk and use primary care to identify individuals at high risk as essential to preventing suicide.

Learning Objectives: Recognize that the elder suicide is a serious public health concern; Identify risk factors associated with elder suicide; Discuss what NVDRS is and how to apply NVDRS's data on the violent injury prevention.

Poster 2763

Decedent and Death Characteristics Predict Manner of Death Among Self-Poisoning Fatalities

Jonathon LaValley[1], L Fullerton-Gleason, PhD[1,2], CS Crandall, MD[1], GT Shires, MD[2]

[1]Department of Emergency Medicine, University of New Mexico, Albuquerque, NM; [2]Trauma Institute, University of Nevada School of Medicine, Las Vegas, NV

Objective: Manner of death is often difficult to assign in self-poisoning cases. We sought to measure differences between suicidal, unintentional and undetermined self-poisonings to identify characteristics distinguishing suicide from unintentional self-poisoning.

Methods: Retrospective analysis of 2,612 self-poisoning fatalities from state medical examiner records involving 490 suicide, 2,009 unintentional and 113 undetermined death, 1994-2003. Unintentional and suicidal self-poisonings were compared by decedent and death characteristics. Odds ratios (OR), positive (PPV) and negative (NPV) predictive values, sensitivity, specificity and associated 95% confidence intervals (CI) were calculated.

Results: Suicidal and unintentional self-poisonings differed by decedent and injury characteristics. Compared to unintentional deaths, suicide victims were female (42% vs. 24%; OR 1.7, CI 1.3, 2.1), White (73% vs. 41%; OR 3.8, CI 3.1, 4.8), and older (45.6 vs. 39.9 years; $p<0.0001$). Intentional self-poisonings involved prescription medications (31% vs. 21%; OR 1.7, CI 1.3, 2.1), caustic substances (5.3% vs. 0.3%; OR 17.9, CI 6.7, 47.7) and carbon monoxide (27.1% vs. 3.0%; OR 11.9, CI 8.6, 16.5). Unintentional self-poisoning more often involved a combination of drugs and alcohol (26% vs. 10%; OR 3.4, CI 2.5, 5.1) including illicit drugs (67% vs. 5%; OR 38.6, CI 25.3, 58.7), over-the-counter medications (62% vs. 22%; OR 5.7, CI 4.5, 6.9), and alcohol (34% vs. 11%; OR 5.0, CI 3.3, 6.8).

Self-poisoning characteristics predicted manner. Ingestion of caustic substances (PPV 80%, NPV 21%) and injury at home (PPV 76%, NPV 16%) predicted suicide. Alcohol alone (PPV 77%, NPV 79%) or in combination with drugs (PPV 92%, NPV 23%), ingestion of illicit drugs alone (PPV 99%, NPV 71%) or combinations of drugs (PPV 92%, NPV 80%) predicted unintentional manner.

Conclusion: Death and decedent characteristics distinguish suicidal from unintentional self-poisonings and may reduce undetermined death coding.

Learning Objectives: Describe characteristics of suicidal and unintentional self-poisonings; Identify decedent and injury characteristics of self-poisoning that predict manner of death; Understand the implications of results with respect to coding undetermined deaths.

Poster 2766

Injuries, Children, and Mortality: Characteristics of This Unwanted Triangle in a Developing Country

Mazyar Shadman, MD[1], SM Ghodsi, MD, MPH[1], BS Roudsai, MD, MPH[2]

[1]Sina Trauma Research Center-Tehran University of Medical Sciences, Tehran, Iran; [2]Epidemiology Department, Harborview Injury Prevention and Research Center, Seattle, WA

Methods: In a one-year period (Sep 1999-Sep 2000) all the LMO (Legal Medicine Organization-Tehran-Iran) lists were reviewed by the researchers to specify the traumatic deaths. Then the detailed information was obtained reviewing the full documents of each specified case. Police reports, hospital reports, family statements, and forensic medicine reports were all reviewed and the designed forms were completed to determine the time period of the death after the injury as well as demographic, causative, and organ injuries information. All trauma victims under 16 years of age are considered in this study due to WHO definition. Results total number of 4233 trauma deaths were recorded during the study period. Children 15 years old or younger comprised approximately 10% (419 cases) of the cases. (62 % male vs. 38% female). Most of the deaths were unintentional 93.2% (371 cases) while homicide and suicide affected 3.8% and 2.3% of cases, respectively. Three-fourths of the children (157 cases) at school age (i.e., 6-15 years old), were students. Seven percent (17 cases) were simple workers. Four out of 17 deaths among child workers were due to occupational injuries. Motor Vehicle Accidents (MVAs) (including pedestrian injuries) have been the most common cause of deaths affecting 50.2% (208 cases) followed by burns 17.9% (74 cases), falls 5.8% (24 cases) and poisoning 5.8% (24 cases). Most of the MVA victims were pedestrians 70.5% (122 cases) followed by car occupants 19.7% (34 cases), motorcyclists (5.8%), and cyclists (2.9%). It is noteworthy that in 92% of bicycle fatalities, a motor vehicle was involved. None of the children was wearing a helmet.

Conclusions: Trauma-related deaths in the pediatric age group are probably a very sensitive indicator of the health of the community and therefore it becomes important to identify potential risk factors. Prevention of childhood injuries is a challenge that has not yet been addressed by pediatricians or policymakers in our society. Prevention of MVA could go a long way in reducing mortality in children, given that more than half (50.2%) of the deaths were related to these. Establishing prevention protocols whether by educating children by all means or strict law enforcements would result in decreased injury-related child mortality.

Poster 2767

Trauma-Related Deaths in Tehran, Detection of the Weak Points

Mohammad Ghodsi, MD, MPH[1], B Roudsari, MD, MPH[2], M Shadman, MD[1]

[1]Tehran University of Medical Sciences-Sina Trauma Research Center Tehran, Iran; [2]Department of Epidemiology, Harborview Injury Prevention and Research Center, Seattle, WA

Background: Injury prevention activities are expensive and limited resources in lesser-developing countries obliges policy makers and public health practitioners to allocate those resource cost-effectively. This study is designed in order to determine the trauma mortality pattern in Tehran, capital of Iran. This pattern will allow us determine which link in the chain of injury prevention activities should be prioritized in resource allocation.

Method: We reviewed all trauma-related deaths reported to Iranian Legal Medicine Organization (LMO) from 1999 to 2000. According to the Iranian Law, all trauma-related deaths should be reported to LMO. Detailed information in regards to the demographic characteristics of the deceased, time, place and cause of death were extracted from the records. Tehran University of Medical sciences, Human Subject Review Committee approved the study. Injuries due to burn and poisoning are not included in this analysis.

Results: A total of 3,097 trauma deaths were recorded during the study period (28.1/100,000 population). Male/female ratio was 4.2. Young adults in their third, second and forth decade of life comprised 24, 16 and 15% of the cases. Motor vehicle crashes (MVCs) (59%) and falls (10%) where the most common cause of death. 51% of the cases died during the first few minutes, 27% during the first few hours after the injury. 19% of the patients died after several days of hospitalization.

Conclusions: Our study showed that in order to decrease trauma mortality in the community, we should mainly concentrate on injury prevention activities and improving prehospital and hospital care should receive the second and the third priorities. Focusing on MVCs and high risk groups such as adults 20-30 years old will probably be associated with the most benefits for the community.

Poster 2771

Training and Cross Training of Domestic Violence and Child Welfare Agencies

Melanie A Wegener, MA[1,2], JH Coben, MD[1,3], M Furbee, MS[1]

[1]Injury Control Research Center, West Virginia University, Morgantown, WV; [2]Department of Counseling, Rehabilitation Counseling & Counseling Psychology, West Virginia University, Morgantown, WV; [3]Departments of Emergency, Morgantown, WV

Background: Due to the frequent co-occurrence of intimate partner violence (IPV) and child maltreatment, national organizations have recommended that staff from Child Welfare Systems (CWS) and Domestic Violence Service Organizations (DVSO) be trained and cross-trained on IPV and child maltreatment. The objective of this study was to describe, in a national sample, the type and extent of training reported by CWS and DVSO on co-occurring abuse.

Methods: Structured telephone interviews were conducted with key informants from CWS and DVSO located within 92 Primary Sampling Units (PSU), using a national sampling strategy. Measures of training and cross-training were developed from previously published guidelines and expert panel recommendations. Sum scores were calculated to indicate overall extensiveness of training for each agency and percentile scores were derived by dividing the sum score achieved by the total possible score. Frequency distributions and comparative analyses across sites were performed according to urbanicity, administration, and poverty.

Results: Interviews were completed by 73 CWS and 89 DVSO. Among CWS, the mean score achieved was 39.5% (range = 2.6% to 79.3%; standard deviation = 17.5). Among DVSO, the mean score achieved was 46.6% (range = 0% to 92.6%; standard deviation = 27.6). Approximately one-third of agencies reported co-training with representatives from other agencies in their community. No statistically significant differences in training scores were found within CWS and DVSO agencies according to urbanicity, administration, or poverty level.

Conclusions: This study provides nationally representative information on training and cross-training among CWS and DVSO. The majority of sites scored poorly, however, several sites performed quite well. Future research should identify factors that facilitate or impede the recommended training for agencies serving families with co-occurring abuse.

Learning Objectives: Describe the frequency and problems associated with co-occurring IPV and child maltreatment. Describe, in a national sample, the type and extent of training and co-training reported by CWS and DVSO on co-occurring abuse. Describe, in a national sample, differences in training scores among CWS and DVSO agencies according to urbanicity, administration, and poverty level.

Poster 2773

Untangling the Issues of Falls and Fall Injuries: A Progress Report from the Injury Surveillance Workgroup 4

Barbara F Chatterjee, MS

New Mexico Department of Health, Santa Fe, NM

Background: Surveillance of falls and fall injuries poses multiple challenges to the injury prevention community. These lie partly in the varied circumstances in which falls and fall injuries occur, dependence on already established coding systems, and inherent conflicts of collecting useful descriptions of fall circumstances and translating this text into encoded data. Further complications arise from recognizing that while some falls produce no injury, they may signal a significant medical issue or later lead to fall injury. Finally, different types of information may be needed for primary fall prevention than for the delivery of services to persons with a fall history or a fall injury.

Methods: To address and untangle these issues, the State and Territorial Injury Prevention Directors Association (STIPDA) created its fourth Injury Surveillance Workgroup (ISW4) on Falls. This workgroup is comprised of injury prevention practitioners, clinicians, epidemiologists and researchers representing state and national agencies and four key collaborating organizations: STIPDA, the National Association of Injury Control Research Centers (NAICRC), the Council of State and Territorial Epidemiologists (CSTE), and the Centers for Disease Control and Prevention (CDC). The ISW4 has been meeting monthly since spring 2004.

This session will focus on the status of the ISW4's work to date, including progress toward consensus recommendations and challenging issues that that remain. Specific topics will include:

1. Establishing working definitions for "falls" and "fall injuries"
2. Identifying the surveillance issues for falls
3. Reviewing the relationship of surveillance data to the prevention, clinical settings, and evaluation

Conference participants are also invited to meet in an informal session with the ISW4 to learn about and weigh in on the issues and progress to date.

Learning Objectives: Recognize the proposed definitions for falls and fall injury; Understand of the complexity of falls identification; Describe coding and training issues that impact on fall injury surveillance.

Poster 2780

Risk Factors Associated With Violent Injuries: A Case-Cohort Study

Andrea T Underhill, MS, MPH[1], SG LoBello, PhD, MSPH[1,2], PR Fine, PhD, MSPH[1]

[1]University of Alabama Birmingham Injury Control Research Center, Birmingham, AL; [2]Auburn University Montgomery, Montgomery, AL

Background/Objectives: This study evaluated the association between demographic characteristics and risk factors associated with violent injuries (cases) vs. controls who were injured by other means (transportation, falls, fire, other). Participants in this study are from the University of Alabama Birmingham's Injury Control Research Center's Longitudinal Study of Rehabilitation Outcomes research project.

Methods: The total cohort of 2,190 survivors of injury included 303 injured by violent means according to E-code classification, and 1887 survivors injured by other means. Characteristics and risk factors included: age, race, sex, employment status, marital status, injury severity (AIS), and blood alcohol level at the time of injury.

Results: Logistic regression indicated that race (OR = 2.12, 1.6 - 2.8), sex (OR = 1.4, 1.03 - 1.9), employment status (OR = 1.6, 1.2 - 2.2, and age (OR = .98, .97 - .99) were all significantly related to violent injury. Alcohol intoxication at the time of injury was not associated with violent injury (OR = 1.15, .85 - 1.6). However, violent injuries were less likely to be either moderate (OR = .29, .19 - .43) or severe (OR = .38, .25 - .57) and more likely to be critical.

Conclusions: This case-cohort study confirms previous findings that violent injuries are associated with being younger, black, unemployed, and male. Alcohol is typically not associated with higher risk of violent injury, but violent injuries do tend to be more severe than injuries by other means. Additional psychosocial risk factors are undoubtedly involved and identification of these will help to effectively target preventive measures.

Learning Objectives: To understand this study as a comparison of victims of violence with victims of other types of injury; To recognize sociodemographic characteristics associated with violent injuries; To consider possible groups to target for interventions; This study was supported in part by Grant No. R49/CE0001911 from the U.S. Department of Health and Human Services Center for Disease Control and Prevention, National Center for Injury Prevention and Control to the University of Alabama at Birmingham, Injury Control Research Center.

Poster 2781

Telephone Survey Respondents' Reactions to Questions Regarding Interpersonal Violence

Michele Lynberg, PhD, MPH, MJ Kresnow, MS, T Simon, PhD, I Arias, PhD, Gene Shelley, PhD

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: Concerns have been raised regarding the appropriateness of asking about violence victimization in telephone interviews and whether asking such questions increases respondents' distress or risk for harm. However, no large-scale studies have evaluated the impact of asking such questions during a telephone interview.

Methods: This study explored respondents' reactions to questions regarding violence in two large recently completed telephone surveys, the second Injury Control and Risk Survey (ICARIS-2) and a pilot study of sexual violence and intimate partner violence modules (SIPV) for the Behavioral Risk Factor Surveillance System. Following the questions regarding their experiences with violence, study respondents (n=9,684 and n=7,698, for ICARIS-2 and SIPV, respectively) were asked if they thought telephone surveys should ask such questions. Respondents were also asked if they felt upset or afraid because of the questions asked.

Results: The vast majority of ICARIS-2 and SIPV respondents (95.4% and 92.4%, respectively) thought telephone surveys should ask questions about violence. Responses were not significantly affected by whether or not the respondent was a victim, the type of violence experienced, recency of victimization, victim's gender, or victim's relationship to the perpetrator. Both surveys also consistently demonstrated that the vast majority of telephone survey respondents were not upset or afraid as a result of being asked about their experiences with violence. Even among the few victims who

reported that being asked these questions made them feel upset or afraid, the majority felt that such questions should be asked in a telephone survey.

Conclusions: These results challenge commonly held beliefs and assumptions and provide some assurance to those concerned with the ethical collection of data on violent victimization.

Learning Objectives: Understand the importance of conducting telephone survey research on interpersonal violence; Understand the concerns that have been raised regarding asking sensitive questions about interpersonal violence; Describe telephone survey respondents' reactions to being asked questions about interpersonal violence.

Poster 2785

The Trajectory of Functional Outcomes Following Minor Injury Among Adult Emergency Department Patients

Ronald Maio, DO[1], N Kirsch, PhD[1], C Tan-Schriner, PhD[2], P Balcena, MPH[1], S Frederickson, RN[3]

[1]University of Michigan, Ann Arbor, MI; [2]Michigan Public Health Institute, Okemos, MI; [3]Saint Joseph's Mercy Hospital, Ann Arbor, MI

Objective: Although injuries treated and released in the emergency department (ED) occur 16 times more frequently than injuries requiring admission and 250 times more frequently than injury deaths, essentially no data exists regarding the functional outcome of these minor injuries. The purpose of this study is to determine physical and social functional outcomes following a minor injury. Such information is critical to determine the health burden from these injuries and the type of strategies to address this burden.

Methods: This is a secondary analysis of an ongoing prospective cohort study of minor injury. Subjects were ED patients 18 years old with a minor injury presenting to a community teaching hospital; all subjects were treated and released from the ED. Time period: 5/15/04-11/15/04. Questionnaires were administered in the ED and by phone at 1- and 3-months post-injury. The SF-36 for Physical Functioning and Social Functioning were the main outcome measures for this analysis. Simple descriptive statistics were calculated.

Results: 294 subjects were recruited. The mean age was 38.15; 53.70% were females. The most frequent injury mechanism was unintentional falls, 30.10%. The SF-36 respective mean scores for Physical Functioning and Social Functioning were: baseline: 90.11, 84.93; 1-month: 81.42, 79.12; 3-months: 87.9, 82.8.

Conclusion: On average, patients treated and released from the ED for a minor injury do not regain baseline physical and social functioning at 3 months post-injury. These finding suggest that minor injury is a substantial health burden.

Learning Objectives: Describe the trajectory of physical and social functional outcome among minor injury patients presenting to an emergency department (ED). Understand that these trajectories suggest that minor injury represents a substantial burden of disease. Understand that the specific factors responsible for these trajectories are unknown.

Poster 2790

Household Firearm Storage Practices by Age of Children in the Home

Renee M Johnson, PhD, MPH, M Miller, MD, MPH, ScD, D Azrael, PhD, D Hemenway, PhD, M Vriniotis, MA, L Hepburn, PhD

Harvard Injury Control Research Center, Boston, MA

Background: Although firearm injuries could be prevented if parents stored firearms unloaded, research suggests that some parents store firearms loaded because they believe their children are too old, or too young, to play with or handle firearms.

Objective: This primary aim of this cross-sectional study is to examine whether firearms are more frequently stored loaded in households with young children (i.e., <5), or teenagers (i.e., <13), as compared to households with children ages 5-12.

Methods: Data come from a national telephone survey on firearms administered in the spring of 2004 (n=2,770). Respondents were sampled using a random-digit dialing procedure. Analyses were restricted to adults with children (<18) living with them, and who had at least one firearm in the home. We computed bivariate associations between the presence of children within certain age groups in the home and the presence of a loaded firearm.

Results: Of the 396 subjects; 21% had a loaded gun in the home. Over one-third (35%) had a child younger than 5, 55% had a child aged 5-12, and 48% had a teenager. The prevalence of loaded firearms was higher among parents whose children were all younger than five (23.3%), or who only had teenagers (23.6%), than among parents whose children were all within the 5-12 age group (19.5%).

Conclusions: Results suggest that parents of older or younger children may be less likely to keep their guns stored safely. This is of concern for many reasons, but especially because the vast majority of pediatric firearm injuries happen to teenagers. Suggestions for future research and implications for practice will be discussed.

Poster 2808

Child Homicide and Suicide in a Lesser Developed Country; The Untold Story

Bahman Roudsari, MD, MPH[1], M Ghodsi, MD, MPH[2], M Shadman, MD[2]

[1]Department of Epidemiology, Harborview Injury Prevention and Research Center, Seattle, WA; [2]Tehran University of Medical Sciences-Sina Trauma Research Center, Tehran, Iran

Background: Data in regards to intentional injuries from lesser developed countries is scarce and it is even scarcer when talking about child homicide and suicide. This study describes the profile of fatal intentional injuries among children (¡Ü 15 years old) in Tehran with a population of more than 12 million people.

Methods: From September 1999 to September 2000, we reviewed all medical and legal documents of the fatal childhood injuries registered in Tehran Legal Medicine Organization (LMO) in order to identify intentional injuries. According to the Iranian Law, all trauma-related deaths should be reported to LMO; otherwise the body will not be buried. The study was approved by the Tehran University of Medical Sciences, Medical Ethics Committee and supervised by Sina Trauma Research Center.

Results: A total of 419 pediatric trauma deaths were reported during the study period. Fifteen cases (63%) were the victims of homicide while nine (37%) cases had committed suicide. 60% of the homicide and 55% of suicide cases were boys. The mean age for homicide and suicide cases was 9.7 (Std. Deviation=4.02) and 12.5 yrs (Std. Deviation=2.1), respectively. Approximately 57% of homicides and 75% of suicides occurred at the scene of injury due to the severity of injury. Penetrating trauma (10 out of 15) was the dominant mechanism of homicide and hanging (6 out of 9) was the main type of injury for suicide cases.

Conclusion: Our conservative estimate of intentional fatal injuries among children (6%) is only reflective of the tip of the iceberg. Inadequate legal support systems for victims, besides lack of surveillance systems in order to capture the suspicious cases of child maltreatment, require prudent attention to this public health predicament.

Poster 2810

Seat Belt Use in Tehran: Facts and Beliefs

Mohammad Reza Jahani, PhD[1], H Shirzad, MD[1], M Shadman MD[2], B Roudsari, MD, MPH[3]

[1]Iranian Police Force, Department Of Health, Tehran, Iran; [2]Sina Trauma Research Center-Tehran University of Medical Sciences, Tehran, Iran; [3]Harborview Injury Prevention and Research Center, Seattle, WA

Objectives: To describe the underlying reasons that prohibits seat belt use among citizens of Tehran. Method and Materials: 810 citizens were selected through two-stage sampling. Clusters were defined based on the zip codes and individuals were identified through convenient sampling. The study was approved by Human Subject Committee of Tehran's Police Department, divisions of Health and Traffic safety.

Results: 810 citizens were interviewed (Male/Female=4/1), 62% were active drivers. Mean age of the interviewees was 31 years (range: 20-82 years). Twenty five percent had more than 12 years of education; 28% of the study population had received at least one ticket and 2% three tickets for not fastening the seat belt. The preventive importance of seat belts (55%), fearful of receiving a traffic citation (10%) and combination of these two factors (35%) were the most common reasons for using seat belts. 91% were aware of the safety impacts of seat belts however only 51% of them used seat belts frequently.

Conclusion: Our study showed that police enforcement is an important factor that can significantly promote seat belt use in the community. Providing the legal requirements for further reinforcement of the seat belt law and changing the seat belt law to a primary law, accompanied by public education and equipping vehicles with standard seat belts might significantly increase seat belt use in the Tehran.

Poster 2813

Nurses in the Classroom

Dawn Marie Daniels, DNS, RN

Injury Free Coalition for Kids of Indianapolis at Riley Hospital for Children, Indianapolis, IN

Background/Objectives: Injuries to children were found to be higher in the inner-city lower socioeconomic neighborhoods of a large Midwestern city. As one aspect of a multi-faceted injury prevention approach in the target neighborhood, a program is presented in third grade classrooms of neighborhood elementary schools in which nurses from local hospitals volunteer for 6-12 weeks in one classroom and provide injury prevention education.

Methods: Pairs of staff nurses from local hospitals "adopt" a classroom. After training by the program coordinator, nurses present weekly injury prevention education to the students in their classroom over 6-12 weeks. The nurses use a national curriculum (Think First) supplemented with creative activities. In addition, the nurses spend one class discussing the nursing profession with the students. Pre and post-tests are administered to measure knowledge changes. Teachers participate in formative and process evaluation pieces of the program. Focus groups with the nurses provide additional formative/process evaluation as well as satisfaction with the program. Injury data is monitored via the county-wide injury surveillance system.

Results: Program implementation was facilitated by: sensitivity to both hospital and school scheduling needs; "pair" teaching concept; continuity of nurses with the same students; and standardized curriculum that allows for creativity. Barriers to implementation included: length of time it took for coordination of school and hospital schedules; busing of neighborhood children to schools outside the targeted neighborhood; and increased emphasis in the schools on increasing academic scores.

Conclusions: The program was well received by children, teachers, and nurses. It was effective in increasing knowledge among the children. The educational component will continue to be carried out as part of a multi-faceted approach to changing behavior.

Learning Objectives: Identify three barriers to implementing a school-based program; Identify at least three essential components needed in the training of nurse volunteers; Apply the lessons learned to the school systems in their community.

Poster 2815

Racial Disparities in Severe Traumatic Brain Injury

Aaron Y Lessen, HE Wang, MD, MPH, AJ Rotondi, PhD, AB Peitzman, MD, JR Lave, PhD

University of Pittsburgh School of Medicine, Pittsburgh, PA

Objective: Prior studies have shown racial disparities in the treatment of minor head injury. We aimed to identify differences in injury patterns, in-hospital interventions and outcomes between black and white victims of severe traumatic brain injury (TBI).

Methods: We examined adult data for 2000-2002 from a statewide trauma registry. We defined severe TBI as Head/Neck Abbreviated Injury Score (AIS) of 3-6. We identified race (black vs. white) stratified by injury mechanism (blunt vs. penetrating). Using univariate odds ratios and survival analysis, we compared injury patterns and severity, in-hospital interventions, ICU and ventilator days, and mortality.

Results: Of 53,749 adults, 13,342 (24.8%) sustained severe TBI; 10,636 (79.7%) whites and 1,743 (13.1%) blacks. Blacks were more likely to sustain penetrating injury (OR 6.13; 95% CI 5.17-7.26). Motor vehicle crashes (39.6%) and falls (40.5%) caused most blunt injuries in both races, but blunt assaults were more common among blacks (OR 5.16; 4.40-6.06). Penetrating injuries were mostly due to suicide in whites (10.9; 6.70-17.62) and assaults in blacks (15.4; 9.36-25.19). For blunt injuries (n=11,721), whites were more likely to require surgery (1.18; 1.01-1.38), experienced longer ventilator course (8 vs. 4 days; $p<0.001$), ICU stays (4 vs. 3 days; $p<0.001$) and higher mortality (1.48; 1.25-1.76). For penetrating injuries (n=628), blacks and whites experienced similar ICU days (6 vs. 4 days; $p=0.35$), ventilator days (5 vs. 4 days; $p=0.98$), and mortality (1.18; 0.86-1.61).

Conclusions: Injury severity, course of care and mortality were higher for whites after blunt TBI but appear to be similar for both races after penetrating TBI. Assault plays a prominent role in severe TBI among blacks.

Learning Objectives: Describe the major causes of severe traumatic brain injury in black and white patients; Describe the major differences in injury patterns, interventions, and hospital course between white and black victims of severe traumatic brain injury; Identify possible future directions for targeted traumatic brain injury prevention strategies.

Poster 2820

Implementing Suicide Prevention Strategies in Juvenile Justice Settings

Louisa Holmes, BA, BA, R Sundararaman, MD, MPH

Suicide Prevention Resource Center (SPRC), Newton, MA

Background/Objectives: The Suicide Prevention Resource Center (SPRC) will present on the risk of suicide in detention facilities and the opportunities for intervention among juvenile offenders. Research indicates that a significant number of adolescents who complete suicide have been in recent contact with the juvenile justice system, or are being detained at the time of death. Hence, there is a need to implement comprehensive suicide prevention measures in juvenile detention settings and to intervene with juvenile offenders experiencing suicidal ideation or facing mental illness.

Methods: SPRC will assemble relevant objectives from the National Strategy for Suicide Prevention and from individual state plans addressing this population; survey current literature to demonstrate an evidence-based approach to implementing a comprehensive suicide prevention strategy in juvenile facilities; outline the critical components necessary for implementation; and compile interventions that have promise in reducing suicide and suicidal behavior among juvenile offenders.

Results: These tools will enable participants to advocate for more effective and wide-ranging programs in juvenile facilities and encourage participants to seek expansive partnerships to respond to the threat of suicide in a comprehensive manner. Implementation of such activities has been shown to decrease the incidence of completed suicides in detention facilities.

Conclusions: Participants will learn practical ways to accomplish goals in their state injury prevention planning efforts that address suicide and suicidal behavior in the juvenile justice population. Additionally, participants will learn about innovative practices in the fields of juvenile justice and suicide prevention and will be exposed to a variety of resources examining current research and data surrounding the relationship between the juvenile justice population and the risk of suicide in juvenile offenders.

Learning Objectives: Summarize current research findings on the incidence of suicide among juvenile offenders; Understand the critical measures necessary to implement comprehensive suicide prevention strategies in juvenile facilities; Identify several exemplary suicide prevention practices and programs in juvenile justice settings.

Poster 2828

One-Year Retention of Increases in Knowledge and Safe Behavior by Participants in Farm Safety Day Camps

DM McCallum, PhD[1,2], SJ Reynolds, MS[3], MB Conaway, JD[1], J Braune, MS[1]

[1]Institute for Social Science Research, University of Alabama, Tuscaloosa, AL; [2]UAB Injury Control Research Center, Birmingham, AL; [3]Progressive Agriculture Foundation, Birmingham, AL

Background/Objectives: Hundreds of farm safety day camps are attended each year by thousands of children in rural communities across North America. Although significant financial and human resources are devoted to these camps, the impact and effectiveness of the programs has not been systematically demonstrated. In particular, most evaluations have included only a pre-test and a post-test administered immediately following participation. This project extends efforts to evaluate such safety education efforts by assessing both immediate and long-term changes in knowledge and behaviors among participants in the Progressive Farmer Farm Safety Day Camp® Program.

Methods: Written pre-tests completed before the start of camp, written post-tests completed immediately after the camp, 3-month telephone follow-up interviews, and one-year telephone follow-up interviews were administered to a sample of farm safety day camp participants, ages 8-13. A random sample of 624 camp participants was selected from 28 of the 250 camps held in 2002. The pre-test, post-test, and follow-up surveys contained 19 behavior items and 11 knowledge questions related to a range of topics that may be covered at a farm safety day camp, such as safety around animals, ATVs, tractors, and fire safety.

Results: Results demonstrate significant Increases in knowledge and decreases in reports of risky behavior from pre-test to post-test. These improvements were maintained three months and one year later.

Conclusions: These results indicate that camp participants gained knowledge and information about safe behaviors, and that they retained the knowledge and reported changes in their behaviors up to a year after their camp participation. The findings lend support to claims for the effectiveness of farm safety day camps for increasing knowledge and improving safe practices among camp participants.

Learning Objectives: Describe the farm safety day camp model as a venue for teaching safety to children; Identify knowledge and behavior changes that occur for participants in farm safety day camps; Describe retention of knowledge and behavior changes in day camp participants.

Poster 2830

Pedestrian Deaths in a Large Urban Area: Expressways and Alcohol

Gregory R Istre, MD[1], MA McCoy, MPH[1], M Stowe, MSW[1], JJ Bernard, MD[2], R Anderson, MD[3]

[1]Injury Prevention Center of Greater Dallas, Dallas, TX; [2]Medical Examiner of Dallas County, Dallas, TX; [3]Parkland Health and Hospitals System, Dallas, TX

Background: Pedestrian deaths account for 22% of all motor vehicle-related deaths in Dallas County, TX. We undertook to describe these pedestrian deaths, using details identified through the medical examiner and the FARS data set.

Methods: We reviewed details of every pedestrian death that occurred in Dallas County, TX, for the 6 years 1997-2002. The ME records included demographic variables, information about the location of the injury and events leading to the death, and blood alcohol content. These records were linked with records of pedestrian deaths from the FARS data set for Dallas County.

Results: There were 381 unintentional pedestrian deaths for the 6-year period (2.9 per 100,000 persons per year; 22% of all MV-related deaths); 75% were male; 84% were adults. Three distinct patterns were apparent. Among children (< 15 yr.), most were Black or Hispanic, occurred during daylight on surface streets, parking lots or driveways. Among older adults (>60 yr.), more were white, were injured on surface streets during daytime, and few had alcohol involvement. Among the 280 adolescent/adult (15-59 years) deaths, 58% occurred on limited-access expressways or their service roads (expressways); more than half of those tested had alcohol involvement, and most occurred during nighttime (8pm-6am). Among the subset of 51 persons 15-24 years of age, 77% of pedestrian deaths occurred on expressways, 85% of which were at night. More than one quarter had attended to a disabled vehicle at the time.

Conclusions: These three patterns of pedestrian deaths may help in designing preventive interventions, including education and other programs to manage disabled vehicles on expressways, and their occupants. This may be especially important for young drivers who drive at night.

Learning Objectives: Outline the differences in the patterns of pedestrian deaths among different age groups; Recognize the importance of alcohol use among persons who died as pedestrians; Describe the role of expressways as the site for pedestrian deaths among young adults.

Poster 2832

Project Ujima: Preventing Youth Interpersonal Violence

Marlene D Melzer-Lange, MD[1], MR McCart, MS[2], LF Phelps, MS[3]

[1]Medical College of Wisconsin, Milwaukee, WI
[2,3]University of Wisconsin-Milwaukee, Milwaukee, WI

Background/Objectives: Because youth injured through interpersonal violence are at increased risk for a repeat injury, we developed a community-based intervention, Project Ujima, to decrease violent injuries. Project Ujima addresses the needs of youth, aged 7 to 18 years, who present to the emergency department at Children's Hospital of Wisconsin with injuries from interpersonal violence.

Methods: Project Ujima is an academic-community-family-hospital partnership which provides medical, mental health, case management, and youth development services. Partners include Children's Hospital of Wisconsin, the Medical College of Wisconsin, and the University of Wisconsin-Milwaukee, as well as many community-based organizations. Evaluation includes assessment of repeat injury for participants and controls and mental health concerns of both youth and their female caregivers.

Results: Youth who receive services are less likely to suffer a subsequent, intentional injury as compared to youth from our community who do not accept Project Ujima services. In a cohort of 24 participants, there were no repeat violent injuries, whereas in a control group of 85 non-participants, there were 8 repeat violent injuries. Trauma symptoms of youth reveal "under-reporting" in male subjects, as compared to female subjects. Program successes include collaboration across multiple agencies, family involvement and engagement of volunteers. "Lessons learned" include need to maintain staff support and safety, need for ongoing data collection to assure ability to evaluate the program, and ongoing partnership development.

Conclusions: By engaging youth who have suffered a violent injury, we identify a group to which to provide multidisciplinary, community-based services. Through the collaboration of multiple partners, we are able to best prevent repeat violent

injuries. Future directions include an anti-bullying project in a grade school in our community and collaboration with community policing efforts.

Learning Objectives: Describe youth risks for interpersonal violence; Identify multidisciplinary services for youth at-risk; Outline measures for successful intervention.

Poster 2833

Childhood Interrupted: Injury Deaths Among American Indian and Alaska Native Children in the First Decade of Life

LJ David Wallace, MSEH[1], K Peabody, PhD[2]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Atlanta, GA

Background/Objectives: Injuries take a disproportionate toll on American Indian and Alaska Native (AI/AN) children. To understand the injury risks that children face at different ages, we looked at the ten leading causes of injury by month of death for infants and age of death by year for ages 1-9 years.

Methods: Fatal injuries among AI/AN aged 0-9 years, were from NCHS mortality data, 1989-1998. Causes of death were defined by the ICD, Ninth Revision, and External Cause Codes. NCHS mortality data characterized by Indian Health Service area were used to calculate IHS rates. National injury rates were calculated using CDC's WISQARS.

Results: Unintentional suffocation was the leading cause of AI/AN injury death from birth to seven months old, with the greatest number of deaths occurring in the first month of life. Homicide was the leading cause of injury death at eight months and the second leading cause overall among infants. For one year olds, the leading cause was motor vehicle nontraffic pedestrian incidents. Homicides and drowning more frequently occurred to children one and two years of age. Fires ranked first or second as the leading cause of injury death for ages two through five, and motor vehicle passenger deaths were the leading cause for ages six to nine years. Unintentional injury death rates for AI/AN, all IHS areas combined, were over two times greater than national rates.

Conclusion: Young AI/AN children are particularly vulnerable from injuries due to unintentional suffocation, child maltreatment, pedestrian incidents, residential fires, as well as motor vehicle crashes. Effective prevention strategies need to be targeted to these ages to reduce the burden of injury among AI/AN children.

Learning Objectives: After this session participants should be able to: Describe the leading causes of American Indian/Alaska Native injury death for infants and children less than 10 years old; Understand that children have different injury risks at different ages; Identify homicide and child maltreatment as a leading cause of injury death among infants and very young American Indians/Alaska Natives.

Poster 2834

Psychiatric Disorders and Injury: Effects on Short-Term Disability

Therese S Richmond, PhD, CRNP, T Ackerson, MSW, V Gracias, MD, K Robinson, MD, J Amsterdam, MD, J Hollander, J Shults, PhD, D Kauder, MD

University of Pennsylvania, Philadelphia, PA

Background/Objectives: The purpose of this study was to examine the effects of psychiatric disorders on disability and quality of life after physical injury.

Methods: Patients presenting to the emergency department for injury were randomly selected to participate in a 12-month longitudinal study. A comprehensive psychiatric evaluation was conducted within 2 weeks of injury using the Structured Clinical Interview for DSM IV-R (SCID). Primary outcomes were disability measured by the Functional Status Questionnaire (FSQ) and quality of life by the Quality of Life Index (QOLI).

Results: 179 subjects had a mean age of 39 years and a mean injury severity score of 4.18. 34% involved motor vehicles, 38% a fall, 10% from assault, 11% household/falling object and 7% from sports. 47.4% were diagnosed with current or past DSM IV-R psychiatric disorders that did not cause exclusion from entry. 136 completed the 3-month evaluation, of which 6.7% had a new major depressive episode; 10.3% had depressive symptoms; 1.5% had post-traumatic stress disorder (PTSD); 2.9% had PTSD symptoms; 3% had substance use disorders; 2% had significant substance use symptoms.

Differences in disability and QOL were examined among the following 4 groups:

1. Negative psychiatric history–No substantial psychiatric symptoms (n=65)
2. Negative psychiatric history–Substantial psychiatric symptoms (n=8)
3. Positive psychiatric history–No substantial psychiatric symptoms (n=37)
4. Positive psychiatric history–Substantial Psychiatric symptoms (n=26)

Groups were significantly different (ANOVA, $p<.05$) on the FSQ mental health, work, and quality of interactions scales and on the QOLI health and functioning, spiritual, family, social and economic, and total scales.

Conclusions: Individuals with a psychiatric history and/or a developing psychiatric disorder have higher disability and lower quality of life 3 months post-injury.

Learning Objectives: Establish the importance of disability and quality of life as important outcomes of physical injury; Distinguish between effects of a positive psychiatric history and developing psychiatric disorders following injury on post injury disability and quality of life; Evaluate the importance of including a psychiatric history in the initial assessment of individuals sustaining physical injury.

Funding: This study was funded by the NIMH (5-RO1-MH63818).

Poster 2835

Pediatric Injury Prevention Counseling: Providers' Thoughts on How to Improve

Thomas Delaney, PhD[1], E Nelson, MD[1], K Keating, BSN[1], D Philibert, MSW[1], J Shaw, RN[1]

[1]University of Pennsylvania, Philadelphia, PA

Background: Though injury is the leading cause of child death after age one, little is known about providers' injury prevention (IP) activities, or about how to improve these. As part of an effort to strengthen IP counseling in Vermont primary care settings, we conducted a statewide assessment of counseling practices to identify potential areas of improvement.

Methods: We mailed a brief survey assessing various aspects of knowledge, confidence, and perceived needs for IP counseling to all Vermont primary care providers who see children (n=494). A small focus group of respondents was convened to expand on survey findings.

Results: Response to the mailing was 44%. Providers saw IP counseling as highly important, but 28% felt they lacked adequate time for it, and more than 40% lacked confidence that it increased preventive behaviors in their patients. Many wanted more information on local epidemiology, car seats, helmets, and farm safety. Only 30% felt knowledgeable of state laws relating to IP. Many expressed a need for resources regarding firearm safety and suicide prevention; 78% lacked confidence they could access appropriate mental heath care for depressed teens. Few used published materials for counseling. Focus group participants believed that effective counseling requires going beyond delivery of general educational information. They suggested tailoring advice individually for families, offering IP devices, relating stories from personal experience or publicized events, acting as community role models, and reinforcing IP efforts from other community sources.

Conclusions: Vermont child health providers consider IP counseling important, but most also believe better specific information and data, as well as more community and material resources, might improve counseling effectiveness.

Learning Objectives: Describe primary care physicians' beliefs about the efficacy of pediatric injury prevention counseling; List primary care providers concerns about access to pediatric injury prevention resources for communities; Outline how pediatric primary care providers might more effectively deliver injury prevention information to patients.

Poster 2838

Number of Gunshot Wounds and Outcomes in Urban Firearm Injury Patients: Death and Length of Hospital Stay

Brendan G Carr, MD, MA[1], DJ Wiebe, PhD[2], CC Branas, PhD[2], CW Schwab, MD[3]

[1]Department of Emergency Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA; [2]Department of Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, PA; [3] Division of Trauma and Surgical Critical Care, Department of Surgery, Hospital of the University of Pennsylvania, Philadelphia, PA

Objectives: As semi-automatic pistol use has increased, physical patterns of firearm injury (FI) have changed and patients more commonly present with multiple gunshot wounds (GSW). We hypothesized that multiple versus single GSW are associated with mortality risk and increased length of stay (LOS).

Methods: Medical charts were abstracted for all patients (15 yr+) with GSW over a four-month period at an urban Level 1 trauma center. The number of GSW sustained to each of five anatomic sites (AS) (head/neck, chest/upper back, abd/low back, buttocks/pelvis, extremities) were identified. Proportions, medians and trends were compared with non-parametric tests and relative risks were computed with the Mantel-Haenszel method.

Results: 111 patients were treated for GSW: 15 (14%) died prior to hospital admission, 66 (60%) were admitted, and 30 (27%) were discharged from the ED. Of the 66 admitted, 65% had operations and 6% required ICU admission. 11% died within 24 hrs of admission. The number of GSW per pt ranged from 1-12 (median=2). Most (62%) pts sustained GSW to a single AS. The median number of AS involved increased with the number of GSW (P<0.01). Patients with multiple versus single AS hit were more likely to die in the ED (16% vs 12%, P<0.05) or be admitted (72% vs 52%, P<0.01). Involvement of head GSW was more likely to be mortal compared to no head GSW (RR=3.4, 95%=1.7-7.0). In patients surviving to hospital admission, the median number of ICU days and LOS increased (P<0.05) with number of AS involved.

Conclusions: Head GSW are particularly lethal and multiple GSW are associated with higher mortality, more ICU days, and longer LOS. Triage and management decisions differ based on GSW sustained.

Learning Objectives: At the completion of the presentation, attendees will: Recognize how semi-automatic pistol use and anatomical patterns of gunshot injury have changed in recent years in the United States; Recognize that bullet hole injury patterns vary by firearm type; Recognize the mortality and morbidity risks associated with single versus multiple gunshot wounds.

Poster 2842

Beliefs Affecting Helmet Use Among Young Skiers and Snowboarders

Thomas Delaney, PhD[1], E Nelson, MD[1], T Maughans, MD[2], J Laurent, RN[1], B Heath, MD[1], J Gratton, RN[3], R Williams, MD[1]

[1]University of Vermont, Burlington, VT; [2]Cincinnati Children's Hospital, Cincinnati, OH; [3]Fletcher Allen Health Care, Burlington, VT

Background: Helmets are effective in minimizing and/or preventing the effects of head injury for skiers and snowboarders. While helmet use is gradually increasing at North American resorts, evidence suggests that adolescent skiers and snowboarders are adopting helmets slowly, despite these groups being at elevated risk for neurological injury. We assessed young peoples' attitudes about helmet use to guide the development of a safety promotion campaign targeting youth.

Methods: A self-administered questionnaire was completed by 382 youth skiers (YS) and snowboarders (YB) recruited from a large winter resort in Vermont.

Results: 170 YS (44% male, mean age 13), and 212 YB (70% male, mean age 14) completed the questionnaire. Among helmet users, 60% of YS and 46% of YB reported using helmets half of the time or less. Helmet users cited safety (60% YS and 62% YB) and warmth (50% YS and 39% YB) as important motivators. Nonusers believed they are safe without a helmet (33% YS and 28% YB), and had concerns about appearance (25% YS and 33% YB), cost (23% YS and 10% YB) and interference with hearing (13% YS and 20% YB). The parents of nonhelmet using YS & YB were less likely to wear helmets (p<.01). Both nonusing YS (65%) and nonusing YB (47%) regarded an instructor/coach as the best source of advice about using a helmet.

Conclusions: Young people using helmets for winter sports report different beliefs about helmet efficacy than do nonusers. Efforts to increase helmet use should address nonusers'

concerns about helmet appearance and interference with hearing, as well as focusing on affordability and improved user education.

Learning Objectives: Identify motivating factors relating to young people's use of safety equipment for winter sports; List specific barriers to increased helmet use among young skiers and snowboarders; Describe the efficacy of helmets in preventing and minimizing neurological injuries in winter sports.

Poster 2845

Risks for Workplace Violence in Long-Haul Truckers: Preliminary Data

Debra G Anderson PhD, DB Reed PhD, S Browning PhD, S Westneat, KAllen BSN, E Kenworthy MSN

University of Kentucky, Lexington, KY

Background and Significance: An average of 20 workers are murdered and an estimated 18,000 workers experience a nonfatal assault U.S. (NIOSH, 2001). The transient nature of trucking increases the risk for experiencing workplace violence (Renner, 1998).

Purpose: To investigate the incidence and distribution of workplace violence among long-haul truck drivers. Specific aims:

1. Identify the types of violence experienced by long-haul truck drivers
2. Identify risk factors that contribute to the violence
3. Differentiate the risks of work-related stress among distinct sociodemographic groups of truckers
4. Determine the prevalence of domestic violence experienced by long-haul truck drivers
5. Identify work environment factors that place truck drivers at risk

Method: A quantitative survey will be conducted with a nonprobability sample (N=1400) recruited at truck shows and truck stops across the United States. Data will be collected on violence-related variables (e.g., harassment, weapons, assault, rape, worksite security, psychological strain, and substance abuse). Qualitative data on violence at the worksite will be collected via phone interviews with a purposive sample of 30 female and 30 male participants.

Data Analysis: Descriptive statistics will be compiled as appropriate for the level of measurements of the variables. Dependent on the specific aim, bivariate relationships, logistic regression, discriminant analysis, Cronbach's alpha, and ANCOVA will be used. Constant-comparative methods and content analysis matrices will be used to describe, analyze, and interpret the qualitative data.

Preliminary Results: The truckers (N=843) have been long-haul truckers an average of 14 years; 65.5% are married; 39.4% have children under the age of 18 (of those 36.6% have children who travel with them); 88.2% have a high school education and 45.4% have attended college; 89.9% Caucasian; 6.5% African American; 2.3% Native American; 3% Hispanic origin. Twelve percent of the truckers (n=100) do not have a residence outside of their truck. Truckers fear for their personal safety at work (74.2%), and have had their safety threatened while driving (87.7%).

Conclusion: Preliminary results indicate that long-haul truckers are at risk for workplace violence. Safety measures at truck stops, rest areas, and delivery sites are needed to decrease workplace violence experienced by this occupational group.

Learning Objectives: Describe incidence and distribution of workplace violence among female and male long-haul truck drivers; Determine work environment factors that place workers at risk for violence; Discuss issues related to transiency and trucking.

Poster 2855

Demographic, Socioeconomic Status, Psychoactive Substance Use Disorders, and Risk-Taking Characteristics of the Pedestrian Struck Population

Gabriel E Ryb, MD, MPH, P Dischinger, PhD, JA Kufera, MA, S Ho, MS, CA Soderstrom, MD

The National Study Center for Trauma and Emergency Medical Systems, University of Maryland School of Medicine, Baltimore, MD

Background: Pedestrian injuries represent approximately 12% of all motor vehicle injuries in the USA. Pedestrian injuries are linked to urban location, darkness, male gender, alcoholism and risky crossing behaviors. We will define the demographic, socioeconomic status (SES), psychoactive substance use disorders (PSUD), and risk taking characteristics of the pedestrian struck population.

Methods: From 5/94 through 12/95, patients admitted to a level I adult trauma center were interviewed and evaluated for PSUD. Pedestrians (N=113) were compared with the remaining unintentional trauma patients (N=661) with regard to demographics, SES, PSUD, trauma history, injury prone behaviors and risk taking disposition using Student's t test and chi-square statistic.

Results: When compared to the remaining unintentional trauma population, pedestrians were significantly more likely to be young, black, not married, unemployed and to have a low income. They were also more likely to have not completed or have been suspended from high school. Smoking, binge drinking, and diagnosis of current alcohol and drug dependence were higher among pedestrians. They were more often alcohol positive and had higher blood alcohol concentration at the time of admission. Similarly, drinking and driving conviction, driver's license loss, recent marital change, past history of assault, and a previous alcohol related injury were also more frequent among pedestrians. However, measures of sensation seeking, risk taking and risk perception were similar between groups.

Conclusions: Measures of sensation seeking, risk taking and risk perception do not differentiate pedestrians from the remaining unintentional trauma patients. Pedestrians represent a subpopulation with a low SES and a high incidence of substance abuse. These factors may mediate the exposure to this particular trauma mechanism and should be taken in account for injury prevention.

Learning Objectives: Define the demographic characteristics particular to pedestrian trauma patients; Define the socioeconomic status profile of pedestrian trauma patients; Identify the injury prone behaviors more common among pedestrian trauma patients.

Poster 2857

Understanding Parenting Practices Across Cultural Groups: A Foundation for Promoting Culturally Sensitive Healthy Parenting

Keri M Lubell, PhD[1], MA Volansky, MPH[2], G Miller, MPH[3], GA Shelley, PhD[1], RR Mahendra, MPH[1], T Lofton, PhD[3]

[1]Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA; [2]Emory University, Atlanta, GA; [3]Westat, Atlanta, GA

Background: Cultural norms and values about parenting practices play an important role in how children are raised and have important long-term consequences for child development. Research suggests that all ethnic groups believe it is unacceptable to abuse children and what types of behavior constitute extreme forms of abuse. However, little is known about how different cultures define either positive parenting practices or milder forms of abuse. To explore these issues, we conducted a series of 40 focus groups with parents from five ethnic groups across the U.S. including African Americans, Asian Americans, Hispanics/Latinos, American Indians, and Whites. In an effort to limit the potential impact of confounding influences, groups were constructed so that participants were similar to each other demographically: all participants were between 18 and 50 years old and all had children aged 3-10; focus groups were conducted with mothers and fathers separately; each ethnic group was subdivided by income (African Americans and Whites), country of origin (Asian Americans and Hispanics/Latinos), or urbanicity (American Indians). The discussions covered a range of issues including what participants viewed as good and bad behavior in children, the types of parental responses they typically saw around them, which were best and which should never be used, how they defined child abuse, and how community members could or should intervene when they saw abuse taking place.

Results: Results indicate strong consensus across cultures in the broad categories of behavior that are considered good (e.g., honesty, hard work, generosity) or bad (e.g., lying, disobedience, fighting). But there were important cultural differences in the relative weight parents assigned to these behaviors. In addition, while all parents preferred disciplinary strategies that emphasized communication with children, they strongly disagreed about the forms of physical discipline that were acceptable when communication failed.

Finally, participants disagreed strongly about the role of "bystanders" when abuse was taking place. Most preferred calling on formal authorities rather than intervening personally, but this was by no means consistent either within or across discussion groups.

Conclusions: Understanding these similarities and differences can enhance our ability to develop health promotion practices that are in line with varying cultural norms and expectations—and therefore more effective—and help avoid imposing ethnocentric viewpoints about what constitutes acceptable or "good" parenting. The presentation will review findings from the focus group study in greater detail and discuss how they help inform our efforts to create culturally competent parenting programs.

Poster 2858

Neighborhood Factors That Influence School Crime

Vicki S Lin, MPH[1], MA Limbos MD, MPH[1,2], CH Casteel, PhD[3], JF Kraus, PhD[1]

[1]Southern California Injury Prevention Research Center, UCLA School of Public Health, Los Angeles, CA; [2]Division of General Pediatrics, Children's Hospital Los Angeles, Los Angeles, CA

Background/Objectives: A significant number of crimes occur on school campuses annually. Few data are available on the influence that characteristics of the surrounding neighborhood have on the school crime rate. The objectives of this study are as follows:

1. To estimate the school crime rate for a sample of schools within the Los Angeles Unified School District (LAUSD)
2. To identify neighborhood factors that places some schools at higher risk for crime

Methods: School crime included crimes against persons (e.g., assault), property crime, drug and alcohol offenses, and other crimes (e.g., weapon possession). School security professionals completed surveys for a random sample of 150 LAUSD schools (55 elementary (ES), 54 middle (MS), and 41 high (HS) schools) within Los Angeles City. A dilapidation index was developed by combining six variables (e.g., graffiti, litter, dilapidated buildings and streets) that described the neighborhood dilapidation status. Logistic regression was used to examine the relationship between neighborhood characteristics and the school crime rate.

Results: The median school crime rates for ES, MS, and HS respectively, were 5.07, 16.75, and 21.09 crimes per 1,000 students per year. HS were at greater risk of school crime compared with MS. Schools with a high crime rate were more likely to be in neighborhoods with high dilapidation compared with a low school crime rate. Communities with a high crime rate were not more likely to have schools with a high crime rate and a park or field in the neighborhood did not seem to influence the school crime rate.

Conclusions: The context of the neighborhood surrounding schools appears to influence school crime rates. Environmental intervention may help reduce school crime and keep schools safer.

Learning Objectives: Develop a better understanding of the risk factors for school crime from a school neighborhood perspective. Identify certain environmental characteristics of the neighborhood surrounding a school that increase a school's risk for crime; Discuss the dilapidation index developed in this study to be used as a research tool to assess neighborhood conditions.

Poster 2860

Emergency Preparedness Among Metro Atlanta Homeowners

Sean P Kearney, BS, KA Mack, PhD, E Sogolow, PhD, ST Diekman, MPH, PhD, ME O'Neil, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: Household emergencies due to natural hazards and fires account for thousands of deaths and injuries annually in the United States. Effective preparation for household emergencies reduces morbidity and mortality, limits property damage, and minimizes disruption in daily life. Recommendations concerning household emergency preparedness are readily available to the public. Research indicates, however, that many homeowners do little to prepare for potential household emergencies. Through focus group research, the authors will identify factors that suggest why some homeowners engage in emergency preparation efforts while others do not.

Methods: Focus group interviews conducted with metro Atlanta homeowners will explore household emergency preparedness in the context of natural hazards and fires. Topics for discussion include the meaning of household emergency preparedness, current level of homeowner preparedness, motivations and barriers associated with preparing, source and content of preparedness recommendations used by homeowners, and ideas to improve household preparedness efforts. Themes and patterns will be generated from the focus group interviews.

Results: The authors will report themes derived from six to eight focus group interviews including social-psychological factors that may indicate why some homeowners prepare for emergencies and why others do not. Due to the nature of this study, results will not be generalizable.

Conclusions: Insights gained from this study will be used to guide future work concerning emergency preparedness with the ultimate goal of encouraging currently prepared homeowners to maintain or improve their efforts and to more effectively motivate unprepared homeowners to engage in emergency preparation actions.

Learning Objectives: Define household emergency preparedness in the context of natural hazards and fires; Identify the social-psychological factors that explain why some homeowners prepare for potential household emergencies and why others do not; Understand future directions for research concerning household emergency preparedness.

Poster 2865

Disparities in Fracture Incidence, Anatomic Distribution, and Injury Mechanisms Among Hospitalized Children, Adults, and the Elderly

Joyce C Pressley, PhD, MPH[1,2], L Quitel, MD[1,2,3], B Barlow, MD[1,2,3]

[1]Injury Free Coalition for Kids, Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY; [2]The Center for the Health of Urban Minorities, Columbia University, New York, NY; [3]The College of Physicians and Surgeons, Department of Surgery, Columbia University at Harlem Hospital, New York, NY

Purpose: Published reports of fracture incidence frequently describe a higher incidence in black children and a lower incidence in black elderly compared to similarly aged whites. This study explores the possibility of a racial crossover in fracture incidence and examines incident fracture by race, gender, injury mechanism and anatomical site.

Methods: The study population included all hospital admissions for fracture to white and black residents of New York State between 2000 and 2002. Cumulative incidence (incident fracture admissions per 100,000/yr) was calculated for 5 year age intervals across the age span by race and gender.

Results: Of 158,351 admissions for fracture, 138,763 were in whites and 19,588 in blacks. Blacks had higher incidence of fracture until age 55 when a crossover occurred and incidence in whites exceeded blacks. While there were differences in fracture incidence by age and race, there were surprising racial similarities in anatomical sites of fracture within age groups. Black elderly were less likely to experience fracture, but the anatomical distribution of fractures that occurred was quite similar to whites. Pedestrian-related fracture was 3 times higher in blacks. Intentional injury, including assault, accounted for 8.6% of fracture-related hospitalizations, but ranged from 5.8% in whites to 22.5% in blacks. Firearms were an infrequent source of fracture in whites, but accounted for 5.4% of fracture hospitalizations in blacks. Although falls accounted for a larger proportion of fracture-related hospitalizations in whites than blacks, hospitalization for falls on stairs was similar.

Conclusions: This study documents a racial crossover in fracture incidence between blacks and whites. Although incidence varied by age and race, the relative anatomic distribution of fracture sites was generally quite similar within age groups.

Learning Objectives: Describe the black-white crossover in fracture incidence; Identify racial differences in mechanisms of fracture across the age span; Discuss the surprising anatomic similarity of fracture distribution in black and white elderly despite the markedly different incidence.

Poster 2866

Violence Resiliency

Leigh Ann Blunt, MS

Central Missouri State University, Warrensburg, MO

Background/Objectives: Violence significantly contributes to the creation of a socially toxic environment (Vorrasi & Garbarino, 2000). Due to the complex nature of violence and variances between genders, it is essential to consider the variety of causal factors that converge and motivate students to become violent. Through examination of the elements found in social competence and other potential protective factors, this investigation sought to discover what allows some students to rebound from toxic situations and experiences and avoid involvement in violent behaviors while others do not. Specifically, this study asked: (a) do the elements of social competence (empathy, a sense of humor, communication skills, relationship skills, and social assertiveness) serve as protective factors for violence resiliency among at-risk adolescent males; (b) is individual social competence influential on engagement in violent and aggressive behavior among at-risk adolescent males; and (c) are there other protective factors for violence resiliency that emerge as important in preventing violent behavior?

Methods: A small case study was conducted in a Midwestern high school. Data were collected from a variety of sources including surveys, unstructured interviews and observations. Participants included boys in grades 9-12 with exposure to one or more risk factors that research indicates contributes to the development of violent and aggressive behaviors.

Results: This study is a dissertation in progress. Final results are not available at the time of this submission, but preliminary data will be presented at the conference.

Conclusions: It is necessary to understand the root causes of violence so appropriate, and possibly gender specific, intervention and prevention strategies can be developed and implemented. Research should focus on accumulated risk and protective factors specifically related to preventing violent behaviors.

Learning Objectives: Identify risk factors that contribute to the development of violent and aggressive behavior; Define violence resiliency; Discuss proposed protective factors that have an effect modification on risks associated with violent and aggressive behaviors.

Poster 2867

Atlas of Injury Mortality Among Native American Children and Youth, 1989-1998

Reshma N Patel, MPH, LJD Wallace, MSEH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objective: We illustrated injury mortality patterns and disparity among Native American children and youth using color composite maps that show regional injury rates across the 12 Indian Health Service (IHS) Areas.

Methods: Causes of death were defined by the ICD, Ninth Revision, External Cause Codes and included motor vehicle crashes, pedestrians, firearm use, suicide, homicide, drowning, fire, and suffocation. Fatal injuries among Native American children and youth, aged 0-19 years, were drawn from NCHS mortality data organized by the IHS.

Results: During 1989-1998, injuries caused 3,718 deaths among Native American children and youth residing in the 12 IHS Areas. Motor vehicle crashes and firearm use were the two leading causes of injury-related death in all IHS Areas. Motor vehicle-related death rates for nine of the 12 Areas were equal to or greater than the top 5% of state rates in the nation. Youth suicide rates for Native Americans were over four times greater than those for Blacks and almost three times greater than those for Whites. The Alaska Native suicide rate was over eight times greater than that of all American youth. The Navajo pedestrian death rate was over seven times greater than that of the nation. In Aberdeen, the fire-burn death rate was six times greater than that of the nation.

Conclusions: Injuries and violence are the leading cause of death for Native American children and youth, accounting for over half of all deaths among ages 0 to 19 years. Geographic mapping of injury mortality serves as a tool to increase awareness both of injuries as a public health problem and of the elevated risk of injury death in specific areas or groups.

Learning Objectives: Identify injury patterns and disparity among Native American children and youth; Describe the impact of eight leading causes of injury death by age, race, and Indian Health Service (IHS) Area; Provide information for practitioners and decision makers to aid in planning injury prevention strategies among young Native Americans.

Poster 2868

Reaching a Community With the Booster Seat Message

Sallie Thoreson, MS[1], B Bailey[1], M Gray[2]

[1]Colorado Department of Public Health and Environment, Denver, CO
[2]DRIVE SMART, Colorado Springs, CO

Background/Objectives: We conducted a three-year community-wide booster seat promotion campaign targeting children ages 4-8 years in Colorado Springs, Colorado. We used a community booster seat observational survey as our outcome evaluation. The project concluded before the state booster seat law began.

Methods: A community campaign in 2000-2003 applied public health principles to increasing booster seat use. The Community Readiness model helped us design and monitor our message that booster seats are protective, affordable and acceptable to children. The campaign distributed booster seats at community and school events; aired radio messages; displayed billboards messages; and distributed brochures in English and Spanish. We used focus groups as formative evaluation and written surveys of parents and children for impact evaluation. Pre- and post- observational surveys in Colorado Springs and a control community of restraint use for 4-8 year olds were used to monitor the outcome of the campaign.

Results: Each survey had over 400 observations from at least 25 community sites. Observed booster seat use over three years in Colorado Springs increased from 11.0% to 44.3% compared to an increase of 2.5% to 12.5% in the control community. Both increases were statistically significant. Driver safety belt use in was strongly associated with restraint use of children. Booster seat use was highest among children riding in mini-vans and SUVs. Booster seat use was lower for children riding in pick-up trucks and sedans, for Hispanic children, in lower income areas, and for male drivers.

Conclusions: Booster seat use rates can be increased substantially even in the absence of a state booster seat law. An array of evaluation methods was essential to the project.

Learning Objectives: Describe an effective community-based injury prevention program; Understand the individual and community factors related to increased booster seat use; Identify evaluation methods to use in community interventions.

Poster 2869

Improving Violent Death Reporting in Kentucky

Sabrina Walsh, MPH

Designed and developed by the Harvard School of Public Health's Injury Control Research Center and the Firearm Injury Center of the Medical College of Wisconsin's Department of Emergency Medicine, Lexington, KY

In anticipation of becoming a part of the Centers for Disease Control and Prevention's National Violent Death Reporting System (NVDRS), and with the financial support of the Kentucky Department for Public Health, a statewide Violent Death Reporting System for Kentucky was initiated in January 2002. Kentucky joined the NVDRS September 1, 2005 as one of 17 funded states.

In Kentucky, a coroner is the highest ranking official at a crime scene. Coroners, along with medical examiners, crime laboratory personnel, and law enforcement personnel generate death investigation reports. When combined, these reports provide a more complete picture of a violent death than previously available through death certificates.

The KVDRS team's first review of the coroner investigation reporting system in Kentucky revealed a 120 county system, 120 coroner offices, 120 elected coroners with a fluctuating number of appointed deputy coroners, and 120 different coroner investigation reports (With no legislation requiring any type of uniformity, consistency, or accountability). At that time, plans to centralize reporting from all 120 county coroners' offices were deemed impossible by state officials.

As part of KVDRS development the KVDRS team began the process of creating a statewide electronic coroner database, and encouraging all 120 counties to utilize (or at least collect all information contained within) the "Coroner Investigation Reporting System" report form. The KVDRS team designed this form using Kentucky coroner investigation reports, CDC recommended variables, and elements contained in the National Violent Injury Statistical System. To date, all 120 county coroners have committed to supplying investigation reports to the KVDRS, 32 counties utilize the CIRS and electronically submit reports when an investigation closes. Phasing system plans include bringing all 120 counties into a statewide web based electronic database. As the phasing system moves forward to include all counties, violent death data collection efficiency will improve, allowing for more timely dissemination—a benefit for violence prevention and control.

Lessons learned:

1. Most coroners are quite willing to work together given a clear understanding of how and why
2. Simplicity in a reporting system is a key factor in gaining participation
3. Beta testing with county coroners not only improves the system, but allows for "word of mouth" promotion with additional county coroners

Poster 2872

Testing the Risk Compensation Hypothesis for Safety Helmets in Alpine Skiing and Snowboarding

Michael D Scott, PhD[1], DB Buller, PhD[2], PA Andersen, PhD[3], BJ Walkosz, PhD[4], JH Voeks, PhD[5], MB Dignan, PhD[6], GR Cutter, PhD[5]

[1]California State University, Chico, CA; [2]The Cooper Institute, Denver, CO; [3]San Diego State University, San Diego, CA; [4]University of Colorado, Denver, CO; [5]University of Alabama, Birmingham, AL; [6]University of Kentucky, Lexington, KY

Background/Objectives: Previous surveys showed increasing adoption of helmets by skiers and snowboarders. Efficacy of helmets for these sports has been questioned on the basis of risk compensation. This survey tracked helmet use by skiers and snowboarders and tested for risk compensation.

Methods: Helmet use was recorded in face-to-face interviews with 1,779 adult skiers and snowboarders at 31 ski areas in Western North America in January-March 2003. Respondents were asked two questions assessing risk compensation: do they (a) ski/snowboard faster, slower or about the same speed and (b) challenge themselves more, less or about the same. Helmet wearers compared current behavior to when they did not wear a helmet; non-wearers, to previous seasons.

Results: In 2003, 23.0% were observed to be wearing a helmet (12.1% in 2001; 19.6% in 2002). Significant univariate predictors of use ($p<.05$) were included in a multivariate logistic regression to identify the strongest predictors of higher use: older guests (O.R. = 1.02, $p<.05$), snowboarders (O.R. = 3.24, $p<.05$), guests with a college degree (O.R. = 1.73, $p<.05$), and those who spent more days on the mountain (O.R. = 3.18-8.03, $p<.05$). Helmet use was significantly associated with less risky skiing/snowboarding (higher speeds, O.R. = 0.64, 95% C.I. 0.49, 0.82; more challenge, O.R. = 0.76, 95% C.I. 0.60, 0.97) compared to no use. A minority reported engaging in more risky skiing/snowboarding (33.6% faster; 35.7% challenge), but this was associated with variables other than helmet use.

Conclusions: Helmet use by skiers and snowboarders continued to trend upwards and does not appear to motivate more risk taking. Helmet wearers engaged in less risk behavior than non-wearers, suggesting that decisions to adopt helmets are motivated by safety concerns.

Learning Objectives: Describe the prevalence of helmet use by alpine skiers and snowboarders in Western North America; Understand the relationship between helmet use and behavior that contributes to injury in alpine skiing and snowboarding; List the characteristics of skiers and snowboarders associated with helmet use and risk behavior.

Poster 2880

Using Public Health Data to Inform a Gun Crime Enforcement Initiative (PSN)

Stephanie A Settanni, MSEd[1], TS Richmond, PhD[1], RA Cheney, PhD[1], MD Grossman, MD[2]

[1]University of Pennsylvania, Philadelphia, PA
[2]St Lukes Hospital and Health Care Network, Bethlehem, PA

Background: The national implementation of Project Safe Neighborhoods (PSN) sought to include community-level data to inform the collaborative development of local law enforcement and outreach strategies. Locally, the use of a pilot version of the National Violent Death Reporting System (NVDRS) provided an example of how these data could inform gun crime prevention strategies.

Methods: Firearm homicide data for the Lehigh Valley of Pennsylvania were collected for 1994 to 2002 from medical examiners/coroners and law enforcement on all Lehigh Valley firearm deaths. These community-based data, which combine vital statistics, arrest and crime data, and descriptive narratives, served as a pilot data collection project, prior to the development of NVDRS. Data from 1999 to 2002 were qualitatively reviewed, identified and grouped by the main themes of each firearm homicide, resulting in 6 different themes. A matrix was developed linking these firearm homicide themes, potential intervention points, and published reviews of intervention effectiveness.

Results: Data detailed 6 emergent themes of firearm homicide in the Lehigh Valley: 1) homicide sparked by another crime 2) self defense or law enforcement 3) gang related 4) drug related 5) domestic violence and 6) other conflicts. These data, when paired with possible intervention points and then promising or effective interventions, created a matrix of potential strategies. Altogether serving as an example of how community-level data can inform and focus locally relevant, targeted gun crime strategies.

Conclusions: NVDRS is a potential data set for identifying community specific firearm homicide themes. These themes, when partnered with targeted strategies, can inform gun crime enforcement initiatives in addressing firearm violence at the community level.

Learning Objectives: Describe how community-level data can inform gun crime enforcement strategies; Recognize emergent themes of firearm homicide for this community and link them to potential intervention points; Outline the process of creating an intervention point and intervention effectiveness matrix.

Poster 2883

Stop Bullying Now! Teenagers Awarded Youth Ventures Implementation Grant

Sarika Tamaskar[1], J Lent[1], M Hines[1], F Fernandes[1], Stephanie Bryn, MPH[2], Seeta Gowda, MPH[2]

[1]National Organizations for Youth Safety/Sherwood High School, Sandy Spring, MD; [2]Health Resources and Services Administration, Rockville, MD

Background: Bullying is repeated harassment, abuse, oppression or intimidations of another individual physically or psychologically. It can take the form of teasing, threatening, taunting, rejecting, socially isolating, hitting, or stealing. Fear of being bullied may keep as many as 160,000 U.S. students out of school on any given day.

High School students are putting bullying prevention into action right where bullying begins: in elementary and middle schools. Bullying is not a right of passage anymore but a form of emotional and/or physical violence that should not be tolerated.

The students, all members of NOYS (National Organizations for Youth Safety), received a mini grant from Youth Ventures USA aimed at reducing bullying in elementary and middle school populations. Their project will involve elementary and middle school students, school staff and parents. If their project demonstrates value it will be considered for replication at the county level.

After receiving education and training about the effects of bullying, 4 high school students submitted a proposal to do something about it. The students working with their school vice principal, interested parents and public health professionals will organize elementary and middle school students to develop their own public service announcements and skits depicting forms of bullying in order to raise awareness and prevent bullying. It is expected that awareness rising in the elementary and middle schools and the mentoring provided by high school students will improve the social climate in the schools participating. Education and training of adults who interface with the younger students at school and at home is also considered an important project component.

Learning Objectives: Describe direct and indirect bullying by boys and girls. Describe ways to assess bullying in the school environment. Describe ways to prevent bullying in the school environment. List resources available to families, health, education, and safety professionals.

Poster 2886

Progress in Traumatic Occupational Injury Research and Prevention, 1996-2005: A Look at the First Decade, and the Future of the National Occupational Research Agenda (NORA)

Herbert Linn, NA Stout, EdD

NIOSH Division of Safety Research, Morgantown, WV

The National Institute for Occupational Safety and Health (NIOSH) along with hundreds of partnering organizations launched the National Occupational Research Agenda (NORA) in 1996. The intent of NORA was to focus and coordinate limited national resources by developing a research strategy that could guide occupational injury and illness prevention research in the U.S. One of the priority areas included in NORA is traumatic occupational injury. This paper assesses the influence of the NORA effort on traumatic occupational injury research; progress made in addressing the specific research needs outlined in the 1998 NORA report—Traumatic Occupational Injury Research Needs and Priorities; and remaining research needs for the second decade of NORA. NORA influences are examined, including changes in funding and focus of research, in the volume of relevant research publications, and in the nation's work injury experience. Progress in addressing the published 1998 research needs is explored through a look at relevant research programs and findings of NIOSH researchers, and researchers outside NIOSH.

Learning Objectives: Understand the nature and influence of the first decade (1996-2005) of the National Occupational Research Agenda (NORA) for traumatic occupational injury; Review progress made in meeting traumatic occupational injury research needs outlined in the 1998 NORA Publication—Traumatic Occupational Injury Research Needs and Priorities (NIOSH Publication 98-134); Learn of the remaining gaps in knowledge that need to be addressed by researchers studying the incidence, causes and prevention of traumatic occupational injuries.

Poster 2887

Nonfatal Intimate Partner Violence Injuries Treated in Hospitals

Sheryll Brown, MPH[1], C Smith-Edwards, MA[2], S Mallonee, RN, MPH[1]

[1]Oklahoma State Department of Health, Oklahoma City, OK
[2]YWCA of Oklahoma, City Oklahoma City, OK

Background: Screening for domestic violence is controversial. However, JCACHO and other organizations recommend that healthcare providers identify abused patients and refer to services. Data were collected on the patterns and characteristics of intimate partner violence (IPV) injuries treated in hospitals. This data may used to aid abuse assessments.

Methods: Population-based surveillance of IPV injuries was conducted in the Oklahoma City Metropolitan Statistical Area from July 1, 2000 - December 31, 2001. Emergency department (ED) and inpatient records for assaults (E960 - E968.9 and 995.80-995.85) were reviewed. Cases were included if injuries and relationship of the perpetrator were documented in the medical record.

Results: A total of 1,085 IPV injury cases (4% hospitalizations) were identified, 90% were female. Persons 25-34 years of age had the highest rate of injury (151.6 per 100,000 populations 15 and older). Among females, rates were highest for African Americans (331.7) followed by Native Americans (167.3), Hispanics (141.5), whites (120.7), and Asians (29.3). There were no differences in hospitalization rates by race. Most persons had soft tissue injuries (78%), followed by sprains (16%), fractures/dislocations (12%), and brain injuries (12%). The head, neck, and face were the frequent sites of injury (46% of injuries), followed by the extremities (36%). More than half of fractures were to the face and nearly one-third to the upper extremities. The proportions of hospitalized and ED treated patients with fractures and brain injuries were similar. Hospitalized persons had significantly more facial fractures (p= 0.02) than ED treated patients.

Conclusions: IPV injuries are characterized by injuries to the head, neck, face, and upper extremities. Injuries to these body regions, particularly, facial fractures, should trigger an abuse assessment by the provider.

Learning Objectives: Participants should: Describe how IPV injury surveillance was conducted; Describe the types of abusive injuries documented in medical records; Discuss the demographics of IPV injuries treated in hospitals.

Poster 2889

Recreational Boating Injuries Treated in U.S. Emergency Departments: 2001 and 2002

Susan L Maclean, RN, PhD, P Désy, Bsc, C Perhats, MPH, A Juarez, MPH

Emergency Nurses Association, Des Plaines, IL

Background: Data on the extent of boating accidents and injuries are lacking. To learn more about this problem, the Emergency Nurses Association in collaboration with the U.S. Coast Guard conducted a national prospective study on 908 recreational boating-injured patients who were treated in 75 U.S. emergency departments during the 2001 and 2002 boating seasons (April 1 - September 30).

Methods: This multi-site study used a prospective survey design to collect data from injured patients and/or their family members during their visit to the emergency department following a recreational boating injury. Using an 83-item questionnaire, trained emergency nurses in 75 emergency departments from 41 states conducted 908 volunteer patient/family interviews. The questionnaire included items on boating conditions, accident conditions and description, patient safety education and experience, mechanism, type and severity of injury, and environmental, operational, and behavioral factors that contributed to the accident.

Results: Descriptive data indicate that operator controllable factors, as opposed to environmental factors or equipment failure, most frequently contributed to these recreational boating accidents. The most frequent types of accidents were water skiing or tubing and falls. Accidents were most often caused by passenger/skier behavior (29.5%), operator inattention (20.3%) and excessive speed (19.9%), which were significantly related ($p < .05$) to the number of people in the patient's boat, operator age and alcohol use.

Conclusions: Findings suggest that boating safety policies and educational programs should focus on measures that reduce operator error and improve safe boating skills. Effective policies might include legislation to establish age limitations or other licensing requirements or economic incentives (e.g., lower insurance premiums) to encourage recreational boaters to regularly complete boating safety courses.

Learning Objectives: List two reasons why boating injury data are lacking; Identify two common factors that contributed to the recreational boating injuries reported in this study; Give two examples of policy and/or educational changes that could be adopted nationally to improve recreational boating safety.

Poster 2890

Preliminary Results on Suicides Among the Older Persons

Dionne White, MPS, K Shaw, MPH

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Atlanta, GA

Background/Objectives: The National Violent Death Reporting System (NVDRS) collects detailed information on all violent deaths, including those from suicide.

Methods: NVDRS is a population-based surveillance system that collects data on violent incidents from multiple data sources, including Death Certificate data, Coroner/Medical Examiner files, and Law Enforcement information. The system is coordinated by the Centers for Disease Control and Prevention. This paper presents data from six of 17 states for data year 2003.

Results: In 2003, NVDRS included 611 suicides among persons aged 65 years and older, i.e. nearly 18% of all suicide cases for the six states. Based on Death Certificate data, over 81% of victims were male and 19% were female. The racial breakdown is as follows: 94% were white, 4% were black, and the remaining 2% were classified as 'Other/unknown'. Of the total number of suicide victims, white males comprised 77%, white females 17%, black males 3%, and black females 1%. Of the 611 suicide victims, 82% included known circumstances surrounding the incident. The Coroner/Medical Examiner data reflects that about 47% of the victims were perceived to be depressed at the time of death by various witnesses, 41% were in treatment for mental illness, and 63% had a physical health problem that contributed to the suicide. Over 83% of deaths occurred at a residence, 3.2% occurred in a motor vehicle, 2% occurred in a natural area, but for about 7% the place of deaths was.

Conclusions: The NVDRS system provides a rich source of information on suicides among the elderly, including information about precipitating circumstances and locations of injury.

Learning Objectives: At the conclusion of this presentation, the participant will be able to: Identify descriptive characteristics among elderly suicides in six states; Identify common circumstances including physical and mental health problems, weapon type, and location of injury; Discuss how the National Violent Death Reporting System (NVDRS) contributes to our knowledge of suicide among persons aged 65+ years.

Poster 2892

The Relationship Between Verbal Ability, Maternal Depression, and Physically Aggressive Behavior Among Children

Elizabeth Anson, BA[1], R Cole, PhD[1], H Kitzman, PhD[1], K Sidora-Arcoleo, MPH, L Chaudron, MD[2]

[1]University of Rochester School of Nursing, Rochester, NY
[2]University of Rochester School of Medicine, Rochester, NY

Background/Objectives: Physical aggression peaks between 24 and 42 months of age and declines as children learn other strategies of resolving conflict. Children who exhibit continued, chronic, physical aggression are most likely to continue this pattern into adulthood. This study examines the relationship between children's verbal ability, maternal depression, and physical aggression.

Methods: A descriptive, prospective study of 278 mothers and their 3 year-old children were used for this study. At age 3, maternal depression was measured by the depression subscale from the computerized diagnostic interview schedule (C-DIS) and child verbal ability was assessed using the Peabody Picture Vocabulary Test (PPVT). Physical aggression was measured using the Child Behavior Checklist (CBCL) aggression subscale at age 4. Only those items pertaining to physical aggression were used.
Results: Child's verbal ability predicted physically aggressive behavior (b= -.064, p =.01). Children with lower verbal ability had higher rates of physical aggression. Maternal depression predicted physically aggressive behavior in the child (b= -5.27, p=.02). Presence of maternal depression leads to higher rates of physical aggression in the child. The interaction of maternal depression and verbal ability also significantly predicted physical aggression (b= .53 p=.05). After controlling for mother's socioeconomic status (SES) the main effects for verbal ability and maternal depression, and their interaction, remained significant predictors of physically aggressive behavior.

Conclusions: Verbal ability and maternal depression were independent predictors of physical aggression. Additionally, maternal depression moderated the relationship of verbal ability on physical aggression. Among children with low verbal ability, those with depressed mothers had the highest incidence of physically aggressive behavior. In contrast, children of non-depressed mothers had lower rates physical aggressive behavior, regardless of verbal ability.

Learning Objectives:
1. Discuss the role of children's verbal skills and the relationship with physical aggression
2. Identify the inter-relationship between children's verbal ability, maternal depression and physical aggression
3. Discuss the impact of maternal SES on the inter-relationships of maternal depression, child's verbal skills, and physical aggression

Poster 2894

Understanding Fire Prevention Using the Case Study Method: Maximizing Primary, Secondary, Qualitative, and Quantitative Data

Sharon Frattaroli, PhD, MPH, GS Bergen, MPH, MS, VM Ta, MPH, AC Gielen, ScD, ScM

The Center for Injury Research and Policy, The Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Background/Objectives: The U.S. Fire Administration views Delaware's fire prevention efforts as a model. However, the reasons behind their success are not understood. We designed a case study for the purposes of describing fire injury in Delaware, documenting the fire prevention programs in place, and understanding the factors that underlie Delaware's fire prevention efforts.

Methods: We reviewed the fire prevention literature to inform our approach, and analyzed two secondary data sets (WISQARS and the Delaware Fire Incident Reporting System, DFIRS) to describe the epidemiology of fire injury in Delaware. In addition, we conducted a series of in-depth interviews with a purposeful sample of Delaware's fire service leaders (n=17).

Results: Quantitative analysis of DFIRS data from 2001 to 2004 identified 1478 residential fires from 2001 to 2004 resulting in 108 nonfatal injuries and 14 deaths. Several other potentially informative data fields (i.e., presence of smoke detectors) could not be analyzed because of missing data. Our literature review revealed that programs involving partnerships with fire departments are associated with better outcomes compared to interventions not involving fire departments. By interviewing a sample of leaders in Delaware's fire service, we gained insight into the roles and functions of fire departments in community fire prevention campaigns. Findings from the final analyses of these data will be presented.

Conclusions: The combination of quantitative secondary data and qualitative primary data obtained through interviews served our research goals well. DFIRS is part of a national fire surveillance program that has the potential to provide injury researchers with valuable fire injury information. In addition, the case study method provides an excellent approach to addressing research questions that require an in-depth understanding of programs.

Learning Objectives: Describe the components of the Fire Incident Reporting System, and other secondary data sources available on fire injury. Assess the utility of in-depth, key informant interviews for understanding the components of a state-level fire prevention program that is nationally regarded as successful. Understand the epidemiology of fire injury in Delaware.

Poster 2896

Body Mass Index Associated With Injury Severity in Motor Vehicle Crashes

Shankuan Zhu, MD, PhD[1,2], R Nirula, MD, MPH[3], Y Narayan, PhD[1,4], K Brasel, MD[1,3], S Hargarten, MD, MPH[1,5], PM Layde, MD, MSc[1,2]

[1]Injury Research Center, Medical College of Wisconsin, Milwaukee, WI; [2]Dept of Family and Community Medicine, Medical College of Wisconsin, Milwaukee, WI; [3]Dept of Surgery, Medical College of Wisconsin, Milwaukee, WI; [4]Neurosurgery Neuroscience Lab, Medical College of Wisconsin, Milwaukee, WI; [5]Dept of Emergency Medicine, Medical College of Wisconsin, Milwaukee, WI

Objective: Studies have suggested an association between body mass index (BMI) and motor vehicle crash fatality. However, it isn't clear whether there is an association of BMI with injury severity in motor vehicle crashes. We hypothesized that increased BMI is associated with the severity of crash injuries.

Methods: Using data from 1998-2002, 29,788 occupants aged 16 or over in Crashworthiness Data System of the National Automotive Sampling System (NASS CDS), a U.S. national representative sample of police reported motor vehicle crashes, were analyzed. Injury severity score (ISS) was set to maximum value, i.e., 75, for those who died within 30 days of the crash. Injury severity was categorized as no injury (ISS=0); minor injury (ISS=1-8); moderate injury (ISS=9-15); severe injury (ISS=16-24); and very severe injury (ISS≥25). Multinomial logistic regression models were applied with injury severity as outcomes (no injury as an outcome reference group) and BMI (with or without quadratic term) as a main explanatory

variable. The interaction between gender and BMI was tested using the above model to determine whether the association between BMI and injury severity differed between men and women. All analyses were re-run among subjects excluding those who died within 30 days of the crash.

Results: There was a significant interaction term between gender and BMI for injury severity (P<0.1 or 0.01). In the gender specific models, after controlling for potential confounding factors related to the characteristics of occupant, vehicle and collision (e.g., age, seat belt use, seat position, type of collision, rollover, ejection, airbag deployment, and change of velocity), there was a J-shaped relation of BMI with severe and very severe injury in men (both P<0.01), whereas in women the relation of BMI with injury severity was not J-shaped but slight linearly increasing (P<0.05 or 0.01). The results remained similar after excluding fatal injuries.

Conclusions: Our study indicates that obese men have a greater risk of severe and very severe injury in motor vehicle crashes than women. The relations of BMI with severe and very severe injuries in men were J-shaped. With the recent substantial increase in obesity in the United States, these results potentially have implications for motor vehicle design, traffic safety, and crash testing standards.

Learning Objectives: The relationships of body mass index (BMI) with injury severity in motor vehicle crashes; How potential confounding factors modify the abovementioned relationships; The relationship of BMI with crash injury severity may differ between male and female occupants.

Poster 2897

Obtaining a Restraining Order: No Evidence of Firearms Influencing Issuance

Katherine A Vittes, MPH, SB Sorenson, PhD

UCLA School of Public Health, Los Angeles, CA

Background: Restraining orders, an important legal intervention for victims of domestic violence, have broad implications for injury prevention. Little is known, however, about the characteristics of persons who apply for a restraining order and how they differ from those who are granted one. Most intimate partner homicides involve firearms, and persons against whom a restraining order is issued cannot legally purchase or possess a firearm. We examined the other side (i.e., whether firearms were associated with restraining order issuance).

Methods: Serving a diverse, multi-lingual population, the Los Angeles Superior Court restraining order clinic is the busiest in the nation. In addition, California maintains arguably the best statewide restraining order registry used to determine firearm purchase eligibility. We linked all applications filed at the LA clinic from May 2003 to January 2004 with those in the statewide database to determine which were granted and entered into the statewide system.

Results: Of the 1,701 applicants, 87.6% were women seeking protection from a man; 89.2% of the requests were granted. Firearms, mentioned by 14.8%, were not associated with order issuance. A substantial minority (43.0%) of those with a restraining order were listed in the statewide database multiple times.

Conclusions: Judges do not appear to take mention of firearms into account in deciding whether to issue a restraining order. Repeat entries in the statewide database suggest that the violence continued; ongoing or different intervention may be needed. Recently identified problems in the statewide database may limit the effectiveness of keeping firearms out of the hands of batterers.

Learning Objectives: Describe the characteristics of individuals for which a restraining order was granted; Describe firearm restrictions associated with restraining orders; Understand the process by which restraining orders are obtained and identify ways in which the process might be improved.

Poster 2899

Parental Violence and Child Behavior Problems

Katherine M Anderson, PM Sullivan, PhD

Creighton University, Omaha, NE

Background: Subjects for this research were children of parents participating in research investigating the psychological characteristics of perpetrators and victims of domestic violence. These adult perpetrators and victims were asked to identify a child who witnessed the violence they either dispensed or endured and to complete a behavior checklist on that child. A control group of parents without records of domestic violence was randomly selected from telephone directories based on zip code matches with the perpetrators and victims. Parent ratings were obtained on a total of 123 children (64 girls and 59 boys) as follows: 52 children (24 girls and 28 boys) 1 ½ to 5 years and 71 children (40 girls and 31 boys) 6 to 18 years.

Preschool aged girls had significantly more depression and sleep problems (p=.01), as rated by mother victims than by father perpetrators or parents of children not exposed to domestic violence. The behavior ratings of young boys by mother victims or father perpetrators did not differ significantly from ratings of boys not exposed to domestic violence. School age and adolescent girls exposed to domestic violence exhibited significantly more aggressive behavior (p=.02) as rated by mother victims than by father perpetrators or controls.

Girls have more adverse behavior consequences to witnessing domestic violence than boys. Mother victims are more aware and recognize these problems at younger ages than father perpetrators. Seeing their mother being beaten has an adverse effect on the mental health status of girls early in their development. Mental health professionals serving domestic violence families need to assess the mental health status of the female children of domestic violence victims and perpetrators in their treatment of these families.

Learning Objectives:

1. Identify the differences in parent perceptions and reports of the behavior of children who witness domestic violence in their home
2. Describe the types of behavior problems perceived in boys and girls who witness domestic violence in the home by father perpetrators and mother victims
3. Recognize that girl witnesses of domestic violence in the home have more adverse mental health and behavior consequences than boys

Poster 2900

Pilot Study Using a Syndromic Surveillance System to Capture Injury Data

John O Davies-Cole, PhD, MPH, S Billings, MEd, L Jones, MPH, S Gebeyehu, MPH

District of Columbia Department of Health Bureau of Epidemiology and Health Risk Assessment, Washington, DC

Background: Since 2001, District of Columbia Department of Health has conducted hospital emergency department (ED) syndromic surveillance for early detection of bioterrorist attacks and disease outbreaks. Syndromic surveillance monitors non-specific symptoms such as respiratory, gastrointestinal and neurological complaints on real-time basis. Injury hospital ED data is available through this system but has not previously been utilized.

Objective: To describe the magnitude injury among residents of the District of Columbia using the Syndromic Surveillance System.

Methods: Injury data was collected from September 28, 2003 through October 31, 2003. The total number of injury cases were 3,469, 56% of these cases included primary diagnosis. Statistically significant relationships between injury types and covariates were determined using Pearson Chi-square.

Results: Injury to limbs/extremities (21.5%) constituted the highest frequency among chief complaints. Of all cases, 15.9% were injury due motor vehicle crashes, and 9.1% head injury. Among all cases, 42% were <18 years of age, 55% were male and 61.9% were ED visits on weekdays. Youth (<18 years) were 2.8 times more likely to visit ED for head injury than adults (>=18 years)*. Among youth, those less than 12 years were 2.4 times more likely to be admitted for head injuries than those 13-18 years of age*. Males were 1.5 times more likely to visit the ED for head injury than females*.

Conclusions: Syndromic surveillance system is useful ED injury data trend analysis during mass casualty and large-scale public events. However, the system has limitations – limited demographics, lack of ICD9 and E-codes. The system can be enhanced by including injury location for monitoring clustering of injury events and to better describe the magnitude and severity of injury in the District.

Learning Objectives: Identify the core components of a syndromic surveillance system; Describe the injury profile of the District of Columbia; Identify limitations of current syndromic surveillance systems in capturing useful injury data. Keywords: Injury, Syndromic Surveillance, District of Columbia* P<0.001.

Poster 2901

Violence Prevention for Trauma Centers: A Feasible Start

Rochelle A Dicker, MD[1], DJ Morabito, RN, MPH[2], S Pope[3], MM Knudson, MD[4]

[1]Stanford University Medical Center, Stanford, CA; [2]San Francisco Injury Center, San Francisco, CA; [3]Trauma Foundation, San Francisco, CA; [4]San Francisco Injury Center, San Francisco, CA

Background: Interpersonal violent injury is a major public health issue with a loss of more than 570,000 potential life years. The cornerstone to “starting” a prevention program is establishing feasibility, the early marker of a science-based program’s utility and viability. The pilot prevention project at

our trauma center illustrates the Public Health Approach by linking victims with mentors and community risk reduction resources. We hypothesized that our project is a model in feasibility for hospital-based violence prevention.

Methods: The Feasibility Tool for the Implementation of Prevention Programs was originally designed to scientifically assess substance abuse prevention programs. We adapted the Tool to evaluate our violence prevention program. A Feasibility Score was derived by three evaluators familiar with project implementation: The Community–based Mentor, the Program Director, and an Acute Care Research Nurse. The tool assesses 42 components within six categories that contribute to prevention program feasibility. The target population (assault victims, 15-34 years old) was located through the trauma registry.

Results: Our pilot was evaluated for feasibility after 24 months. Of the six key categories, community and organizational climates scored highest. Resources, specifically, the "funding" component, scored lowest. Overall feasibility was 854±14 of 1000 possible points. Inter-rater reliability was calculated to be 86%.

Conclusions: Trauma centers can integrate collaborative prevention projects to reduce the risk of reinjury. Our project has a high degree of measurable feasibility with good inter-rater reliability. Elements generating low scores or high standard deviations can be attributed to uncertain funding and limitations in the Mentor's time. This program can be considered a viable "starting point" for other acute care trauma centers.

Learning Objectives: Define an objective way to evaluate feasibility of a prevention program; Develop a Logic Model describing how to feasibly link in-hospital patients injured from interpersonal violence to risk reduction resources; Describe how the public health model can be adapted for use in hospital-based violence prevention program.

Poster 2902

Suicides in Massachusetts in 2003: Data Findings From the Massachusetts Violent Death Reporting System

Holly Hackman, MD, MPH, L Ortega, MD, MPH, Y Zhang, MD, MPH

Massachusetts Department of Public Health, Boston, MA

Background: Suicide has been identified as major public health problem. Suicidal behavior can be found across the lifespan, claiming numerous lives every year. A Surgeon General's report describes suicide as a complex behavior caused by a combination of factors. While some of these factors have been identified, others remain elusive due to a lack of data.

Objective: Using data from the Massachusetts Violent Death Reporting System (MA-VDRS), we examined the information available on suicide deaths occurring in Massachusetts (MA) in 2003.

Method: Death data from the 2003 MA-Violent Death Reporting System (MA-VDRS) was used to characterize the magnitude of suicides in MA, the effect of these deaths on various demographic groups, the weapons most commonly used in completion, and the associated circumstances.

Results: In MA, in 2003, there were 410 suicide victims; there were no incidents of multiple suicides. Seventy-five percent of the victims were males, 37% were 35-49 years of age, and 45% were never married. The most common weapons used for suicide was hanging (37%), firearms (28%), and poisoning (22%). Circumstances were available for 76% of the victims. Of these, 48% had a "current mental health problem," 39% had "ever treated for a mental illness" and 35% were "currently receiving treatment for a mental illness," 22% had a history of alcohol and/or other substance problem, 18% had previously disclosed their suicide intent, and 16% had a history of past attempts. Thirty-two percent of the victims tested had a positive toxicology for alcohol.

Conclusion: Suicide affects a large number of MA residents each year. The National Violent Death Reporting System contains important demographic and circumstance information on these events which may be useful for prevention.

Learning Objectives: Understand the magnitude and demographic characteristics of suicide in MA; Describe the common weapons used by victims of suicide in MA; Describe the range of circumstance information available on suicides through the National Violent Death Reporting System.

Poster 2903

Assessing Injury Risk Management as Compositional Data

Craig L Anderson, PhD, MPH[1], PF Agran, MD, MPH[1], DG Winn RN, MPH[1], KA Babb, PhD[2]

[1]University of California-Irvine, Orange, CA; [2]University of Windsor, Windsor, Ontario, Canada

Background: Parents tend to strongly agree with statements about protecting toddlers from injury, limiting the useful of Likert scales to assess the importance placed on various injury prevention strategies. Responses from sorting tasks and rankings provide do not measure the extent to which parents place more importance on a higher ranked choice. Other disciplines have used compositional analysis to examine data that sums to a fixed total, such as the chemical components of mineral samples in geology.
Method: Mothers were presented with six to seven responses to each of five injury scenarios and asked to distribute thirty chips among the responses to each scenario. The responses included supervision, barriers, teaching the child to avoid hazards, and other responses.

Results: We found that the most useful approach to interpreting our data was graphical. The sum of the two effective responses, supervision and barriers, was displayed on the y axis, and the difference between the two effective responses was displayed on the x axis. The graphs demonstrated the extent to which the more effective responses were selected and the balance between supervision and barriers. The importance of barriers and supervision for different scenarios can be compared to measure the extent to which mothers placed more importance on supervision in situations where the mother could expect to have less control over the environment. Regression analysis was used to identify predictors of the sum and difference of the two effective approaches.

Conclusion: This method forces mothers to weigh the importance placed on different injury prevention strategies in realistic scenarios. It measures the importance placed on effective approaches and the mothers' adaptation to different environments.

Learning Objectives: Define compositional data; Describe the graphic presentation of the importance placed on various injury prevention strategies; List three advantages of using a compositional approach to assess injury prevention strategies.

Poster 2904

A Brief Survey of Hospital Emergency Departments on Policies and Practices Regarding Domestic Violence

Sheryll Brown, MPH[1], J Kabore[2]

[1]Oklahoma State Department of Health, Oklahoma City, OK; [2]Graduate Student, University of Oklahoma College of Public Health, Oklahoma City, OK

Background: Domestic violence (DV) may affect 25-30% of women at some time in their life. Often injuries from domestic assaults are treated in hospital emergency departments (ED).

Methods: The Oklahoma State Department of Health conducted hospital surveillance of intimate partner violence (IPV) injuries from 2000 - 2002. A component of surveillance was training for healthcare providers on assessing patients for DV. A brief survey was mailed to ED nurse managers in August 2004 to determine hospital policies, practices, and training needs regarding DV assessment.

Results: The survey was mailed to 118 hospitals, 57 (48%) hospitals returned surveys. Seventy percent of responses were from small hospitals (<100 beds); 28% from large hospitals (>99 beds). Seventy-five percent of small hospitals and 81% of large hospitals had policies on assessing patients for DV. Overall, 81% of hospitals reported that patients were always/often or sometimes assessed for DV. Large hospitals reported assessing patients for DV always/often more frequently than small hospitals (56% and 40%, respectively); only small hospitals reported that they seldom or never assessed patients for DV (28%). Eighty-one percent of hospitals reported that ED staff needed training on assessment and documentation of DV injuries. Over half (58%) of hospitals reported that DV assaults were always/often reported to the police; 25% of small hospitals and 13% of large hospitals reported that DV was seldom/never reported to police.

Conclusions: The majority of responding EDs had policies on assessing patients for DV and always/often or sometimes assessed their patients. The majority of hospitals reported a need for staff training. Small hospitals were less likely to assess patients for DV, and less likely to report DV to the police.

Learning Objectives: Participants should: Describe the survey inquiry; Describe differences and similarities between large and small hospital responses; Discuss hospitals reporting domestic violence assaults to the police.

Poster 2908

Trends in Opioid-Related Poisoning Deaths, Massachusetts, 1990-2001

Holly Hackman, MD, MPH[1], W Fernandez, MD, MPH[2], L McKeown, MPH[1], B Hume, MPH[1]

[1]Massachusetts Department of Public Health, Boston, MA; [2]Boston Medical Center, Boston, MA

Background: Poisonings, including acute drug overdoses of licit as well as illicit substances, represent an important, yet preventable, public health problem. Since 1997, poisonings have been the leading cause of injury mortality in Massachusetts. Health officials in several regions of the country have reported increases in poisoning deaths in recent years, particularly from heroin and other opioids. We sought to describe trends in opioid-related poisoning deaths among Massachusetts residents.

Methods: ICD-9 and ICD-10 coded Massachusetts death files for the years 1990-2001, maintained by the MA Department of Public Health's Registry of Vital Records and Statistics, were used to identify poisoning deaths, and any association of these deaths with an opioid. Frequencies and age-adjusted rates of all poisoning and opioid-related poisoning deaths were generated for each year for the overall population and by sex, and race/ethnicity. Numbers and rates of age-group specific deaths were also generated for each of the years.

Results: From 1990-2001, the age-adjusted poisoning death rate increased 96% in Massachusetts. Opioid-related fatal poisoning rates increased 436%, from 1.4/100,000 in 1990 to 7.5/100,000 in 2001. The proportion of total poisoning deaths associated with opioids rose from 28% in 1990 to 68% in 2001. Opioid-related fatal poisoning rates increased among both males and females and among age groups 15-64 years of age.

Conclusions: Massachusetts experienced a considerable increase in opioid-related poisoning death rates from 1990-2001. Further investigation is necessary to better delineate the specific opioids involved, the circumstances surrounding these deaths (e.g., EMS response, police notification), medical/behavioral healthcare, as well as the source of distribution for these agents.

Learning Objectives: To identify poisoning as a leading cause of injury mortality. To understand recent trends in opioid-related poisonings in one state. To recognize that limited information on the poison agents in these deaths is available through ICD coded death data.

Poster 2918

Population-Based Outcome of Traumatic Spinal Cord Injury in South Carolina

Lee Lineberry, AW Selassie, DrPH, EE Pickelsimer, DA, JS Nicholas, PhD

Medical University of South Carolina, Charleston, SC

Background: The long-term outcomes of Traumatic Spinal Cord Injury (TSCI) are well documented. However, one-year outcomes as a function of acute care management are limited.

Objectives: 1) measure general and physical health status, 2) assess functional status by type of lesion, and 3) detect outcome differences as a function of administration of Methylprednisolone Sodium Succinate (MPSS) among persons with TSCI.

Methods: Population-based data were collected from the SC statewide hospital dataset using ICD-9-CM codes of 806 and 952. Medical records provided additional information. Trained interviewers administered a telephone questionnaire 9–12 months after hospital discharge. Composite general health was scored according to SF-36 guidelines and injury severity for the spine region was estimated with the Abbreviated Injury Scale (AIS) using ICDMAP-90 software. We used chi square, t-test, and logistic regression to examine differences in outcome as a function of clinical and demographical characteristics.

Results: Overall 127 patients provided information. Seventy-five percent have TSCI while 25% have TSCI with Traumatic Brain Injury (TBI). Approximately 40% sustained severe injury (AIS 4-5). Sixty percent have poor composite general health score. Fifty-five percent of all lesions result in profound disability as measured by activities of daily living (ADL). Although not statistically significant, a higher proportion of persons with TBI and TSCI have functional limitations than persons with TSCI. The physical functioning score and disability status were not different between persons who received MPSS and those who did not (p=0.56), (p=0.24), respectively.

Conclusions: Poor general health sets in as early as the first year. There appears to be no significant differences in functional outcomes and general health as a function of treatment with MPSS during acute care.

Learning Objectives: Describe the general and physical health status of people with TSCI one year after hospital discharge; Depict the disability status of persons with TSCI as a function of administration of MPSS; Identify the effects of MPSS on physical functioning.

Poster 2919

Initiating a State-Based Violent Death Reporting System in Alaska

DMC Hull-Jilly MPH[1], WS Saxon[1]

[1]State of Alaska, Department of Health and Social Services, AK

Background: The Alaska Violent Death Reporting System conducts research on violence-related deaths in Alaska as part of the Centers for Disease Control and Prevention grant-supported program. The purpose of state-based program of the National Violent Death Reporting System (NVDRS) is to identify violence-related deaths, collect data for a state and national databases, review abstracted report elements pertaining to the fatal event, and identify potential strategies for Alaska stakeholders to reduce the number of violent deaths. While having a comparatively small population (~675,000), Alaska experiences roughly 250 suicides and homicides each year. The need to collect and analyze the basic information about the characteristics and circumstances of these deaths from departmentalized records lead the State Department of Health and Social Services to apply for funding to establish an Alaska National Violent Death Reporting System (AK-NVDRS). Its successful implementation depended on cooperation from key data sources including Alaska's Medical Examiner's Office, Bureau of Vital Statistics, and numerous law enforcement offices statewide (47 State Trooper posts, 40 police departments, 56 village public safety officers, and various federal and state agencies) that span an area one-fifth the size of the contiguous United States (571,951 sq. miles). Steps were also taken to establish agreements with the aforementioned agencies and coordinate with the Alaska Fatality Assessment Control and Evaluation (FACE) program to learn what methods of data collection were most efficient, providing minimal impact and disruption to operations of data source agencies. In addition, the AK-NVDRS established new relationships and expanded the scope of existing relationships to provide assurances for data security and continuous interagency communications. Data from the AK-VDRS will enable public health, public safety, and communities to develop targeted interventions.

Presentation Focus: Development of successful relationships with law enforcement and other essential source agencies; Collaboration with the AK-FACE program.

Learning Objectives: Participants will be able to list three essential AK-NVDRS source agencies; Participants will be able to describe two successful communication strategies to work with law enforcement agencies; Participants will be able to list two benefits to working cooperatively with state-based FACE programs and other surveillance programs to facilitate communication and system implementation.

Poster 2923

Integration of Injury Surveillance Into the North Carolina Public Health Preparedness and Response Program

Nevada A Wolfe, MPH[1], CP Sanford, MSPH[2]

[1]NC Dept of Health and Human Services, Division of Public Health, Raleigh, NC; [2]Injury and Violence Prevention Branch, Raleigh, NC

Background: After 9/11, North Carolina received funding for a Public Health Preparedness and Response Program in the Division of Public Health. In 2003, the Preparedness Program expanded its ability to respond to injuries resulting from terrorist events and natural disasters by contracting for an epidemiologist from the Division's Injury and Violence Prevention Branch.

Methods: The Branch's epidemiologists participate in the Preparedness Program by developing instruments for rapid needs assessment; training regional Public Health Response and Surveillance Teams to conduct injury surveillance; analyzing surveillance data; and designing injury prevention strategies. They are actively involved in developing procedures to conduct injury surveillance as part of the annual, state-level, terrorism preparedness exercises. The branch acts as liaison with other agencies and research institutions in developing an assessment of state trauma response.

Results: Injury surveillance is now a standard part of the state's Preparedness and Response Program's rapid needs assessment following natural disasters and chemical releases. The branch is collaborating with the NC Office of Emergency Medical Services and the North Carolina Injury Prevention Research Center to develop a needs assessment of the state's

healthcare system capacity to provide trauma care during and after an acute event. When the state's Public Health Command Center is activated, the Branch epidemiologists provide assistance to local public health operations, as well as communicate with state and federal agencies. For 2005, the Branch epidemiologists are developing surveillance instruments and protocols to respond to a terrorist chemical release and mass casualties resulting from a plane crash.

Conclusion: To respond as comprehensively as possible to disaster situations in North Carolina, injury epidemiology must be incorporated into the planning of all aspects of preparedness and response.

Learning Objectives: Identify opportunities for injury epidemiology to bolster disaster response efforts; Recognize core data elements of injury surveillance during an acute event; Define how the leveraging of resources and the emphasis on collaborative efforts between multiple agencies have resulted in successful implementation/integration of injury surveillance methods.

Poster 2924

The Disparity of Traffic Law Knowledge Base Between Hispanic and Non-Hispanic Whites in Southern California

Sharon Lotfipour, MD, K Anderson, CV Patel, MD, CL Anderson, PhD, R Mendoza, NP, RL Barton, PA-C, M Dollich MD, FE Vaca, MD, MPH, ME Lekawa, MD

University of California Irvine College of Medicine, Orange, CA

Objectives: This study investigated demographic factors contributing to a decreased awareness of basic traffic laws among the Hispanic population in southern California.

Methods: The cross-sectional study included adults (n=117) involved in motor vehicle crashes presenting to a Level 1 trauma center in southern California over a seven-month period. Subjects consented to complete a survey about California traffic law knowledge (TLK) consisting of eight multiple-choice questions. The mean number of questions answered correctly was compared to the subjects' demographic data.

Results: The mean number of TLK questions answered correctly by the Hispanic and non-Hispanic White (NHW) groups were significantly different at 4.15 and 4.74, respectively (p= 0.013 and 95% confidence interval (CI) for the difference -1.04 to -0.13). Scores were also significantly lower with subjects who were not fluent in English (p=0.005 and 95% CI –1.38 to –0.26), had less than a high school education (p<0.001 and 95% CI –1.63 to –0.54), or received their TLK from a source other than a driver's education class or DMV materials (p=0.001 and 95% CI –1.42 to –0.38). Differences in TLK were not significant between gender, drivers and passengers, or according to differences in blood alcohol, illicit drug use, or household income. ANOVA analysis comparing the four significant factors above showed that source was the strongest predictor of accurate traffic law knowledge (p=0.026).

Conclusions: Hispanics were not able to answer as many questions correctly on TLK survey as NHW's. The other demographic factors that contributed to the lower scores seen in the Hispanic group emphasize that formal driving class instruction or printed DMV materials in a subject's native language are ideal forums for the dissemination of accurate basic traffic law knowledge.

Learning Objectives: Define the role ethnicity may play in motor vehicle-related trauma; Outline the ability of the local Hispanic population to answer traffic law questions; Define other demographic factors that contribute to lower survey scores.

Poster 2925

Fire Safety Messages for Young Children 3 to 5 Years Old: Applying Best Practices From the Field of Early Childhood Education to Fire Safety Programming and Injury Prevention

N Trench, BS[1], A Harrist, PhD, L Cain, BS, M Gungoll, BS[2]

[1]Fire Protection Publications, College of Engineering, Architecture and Technology, Oklahoma State University, Stillwater, OK; [2]Department of Human Development and Family Science, Oklahoma State University, Stillwater, OK

Background and Objectives: Preschool age children are especially at risk for home fire deaths and burn injuries, yet the capabilities of young children makes teaching fire safety especially challenging. The project was based on two

assumptions: (a) children can only be expected to understand and use fire safety messages when they have achieved the necessary physical, cognitive, and socioemotional milestones; and (b) the better educators understand the capabilities of children, the greater the likelihood a fire safety program has at succeeding.

The presentation will present findings from an interdisciplinary project with the goal of integrating best practices in early childhood education (ECE) into primary injury prevention programming. Short-term goals were to (a) conduct a critical literature review of ECE research relevant to fire safety education; (b) develop a Checklist for Developmentally Appropriate Expectations (the CDAE); and (c) assess common fire safety messages using the CDAE.

Method and Results: The report discusses how children's motivation, emotions, and stress impact learning, as well as how to apply ECE best practices such as the use of play or family involvement in learning about fire safety.

The CDAE uses a spreadsheet format to summarize developmental milestones expected at each age across physical, cognitive, and socioemotional realms.

The CDAE was used to assess commonly-used fire safety messages in terms of the underlying skills needed for their understanding and use among children aged 3, 4, and 5, respectively.

Conclusions: The CDAE and accompanying reports are for use by early childhood and fire safety educators (e.g., firefighters who visit ECE classrooms) as they adapt and implement existing programs or develop new programs to reduce fire and burn injury in young children.

Learning Objectives: Describe developmentally appropriate teaching practices for 3-, 4-, and 5-year olds as they pertain to fire safety and injury prevention; Identify physical, cognitive, and socioemotional developmental milestones for 3-, 4-, and 5-year olds, using the CDAE; Critique commonly-used fire safety messages (e.g., "Stop, drop, and roll") in light of the developmental abilities and developmentally appropriate teaching practices for 3-, 4-, and 5-year olds.

Poster 2928

Adverse Alcohol Events and Suicides in the United States Air Force, 1999-2004

Brooke Wackerman, MPH, G Vance, MPH

Air Force Institute for Operational Health/Oak Ridge Institute for Science and Education Brooks City-Base, TX

Background: The United States Air Force (USAF) helps members with alcohol problems through its Alcohol & Drug Abuse Prevention & Treatment (ADAPT) Program. ADAPT staff enter alcohol adverse events into the Alcohol and Drug Abuse Data System (ADADS).

Methods: To examine associations between prior alcohol misuse and suicide in the USAF, we analyzed active duty decedents from the USAF Suicide Event Surveillance System (SESS) from 1999-2004 who had events in ADADS.

Results: Of 208 suicides, 24 (12%) were in ADADS. Six (25%) were in ADADS twice. Of the events closest to suicide, one-quarter each was primarily coded as DWI/DUI (n=6) or medical care (n=6), while 3 (13%) were related to underage drinking. Half of cases (n=12) were referred by a superior, 25% (n=6) by medical providers, 17% by authorities (n=4), and 8% (n=2) by self. Fewer than half (n=10, 54%) were diagnosed with alcohol abuse or dependence. Level of treatment, ranging from education to inpatient care, was not elevated for events closest to suicide. More presented to ADAPT within 1-2 years preceding suicide (n=9, 38%) than presented within 1 month (n=1, 4%); 1 to 3 months, 3 to 6 months, 6 to 12 months (n=3, 12.5% each); 2-3 years (n=2, 8%); or 3 to 4 years (n=3, 12.5%). Among the six with prior ADADS events, 2 were previously diagnosed with an alcohol disorder. Five received mental health diagnoses for the second event. Level of care increased for half.

Conclusion: Though ADAPT is a potential intervention point for suicide, few suicides are preceded by ADADS events. Further, care was moderate to light, and alcohol events were not typically in close proximity to the suicide.

Learning Objectives: Learn what the helping services are for alcoholism in the Air Force; Understand the percent overlap between suicides and adverse alcohol events in the United States Air Force over a five-year period; Describe the characteristics of adverse alcohol events occurring prior to suicide.

Poster 2929

History of Ambulatory Medical Visits in the Active Duty Air Force Population in the One, Three, and Twelve Months Prior to Suicide

Katharine Carvelli, MPH, G Vance, MPH

Air Force Institute for Operational Health/Oak Ridge Institute for Science and Education Brooks City-Base, TX

Background: The U.S. Air Force (AF) population provides a unique opportunity to study medical visits prior to suicide, as the AF maintains records on all cases of confirmed suicide and ambulatory clinic visits among active duty Air Force (ADAF) members.

Methods: Using STATA statistical software, data from the Suicide Event Surveillance System (SESS) were coupled with data in the Standardized Ambulatory Data Registry (SADR) to describe the frequency and type of medical visits during the one, three, and twelve months prior to suicide.

Results: There were 185 ADAF suicides between CY 2000-2004, generating a rate of 10.4/100,000. The majority of suicide victims were male (94%), under the age of 35 (79%), and Caucasian (75%). Preliminary results indicate that in the one, three, and twelve months prior to suicide, 46%, 56%, and 78% of victims had at least one ambulatory clinic visit, respectively. The most common reason for visit was mental disorders, and the frequency of these visits increased as time between medical visit and death decreased. Eighteen percent of victims had at least one visit due to mental disorders in the month prior to suicide, and comprised 31% of the total number of visits during this period. In the three and twelve month periods prior to suicide, 24% and 31% of the victims had a least one visit for mental disorders, respectively. They, however, comprised 33% and 14% of the total number of visits during the corresponding time periods. Twenty-two percent of victims had no ambulatory care prior to death.

Conclusion: Ambulatory clinic visits, particularly for mental disorders, provide a point of intervention for potential suicide victims. A matched case-control study is pending.

Learning Objectives: Reference the rate of suicide in the active duty Air Force (ADAF) population and summarize the characteristics of ADAF suicide victims; Describe the healthcare seeking behavior of ADAF suicide victims prior to suicide; Understand the opportunity health providers have in identifying individuals at risk for suicide.

Poster 2938

Partnering for Prevention

Mary Dolan, MA, A Franchak

Center for Schools and Communities, Camp Hill, PA

Background/Objectives: The Pennsylvania SAFE KIDS Coalition and the Center for Safe Schools operate under the direction of Center for Schools and Communities. The Center supports education, community and family, and violence and injury prevention initiatives. Various areas of need were identified such as; comprehensive safe schools planning, bullying prevention, Internet safety, and childhood injury prevention.

Methods: The Pennsylvania SAFE KIDS Coalition and the Center for Safe Schools has developed partnerships to bring violence/injury prevention training opportunities to local schools and communities. Regional training opportunities were selected and occurred throughout the Commonwealth to build local capacity and support implementation. Examples of regional and state-wide training opportunities include bullying prevention, Be Safe & Sound, Internet safety, child safety seats, sports, pedestrian, and bike safety education.

Results: As a result of these partnership efforts over 200 bullying prevention committees have been formed in Pennsylvania's school districts, 400 law enforcement officers have received training in Internet safety, 10 Be Safe & Sound grants have been awarded to schools and communities, and annually 50-60 min-grants are given for injury prevention projects. Challenges encountered included: promotion of training opportunities, collection of data, and follow through by grantees.

Conclusions: By developing working partnerships and utilizing systems in place to provide trainings to local schools and communities, students, parents and community partners have received education and support for local programs and initiatives. The accuracy of the collected data has been contingent on the willingness of attendees to submit reports to the Center. Future plans include developing partnerships to research program effectiveness and developing state-of-the-art training opportunities ands web-based training.

Learning Objectives: Identify collaborative strategies used to partner with federal, state departments, agencies, and organizations to build local capacity for violence/injury prevention efforts; Identify methods used to communicate the availability of violence/injury prevention training opportunities in local schools and communities; Identify data collection methodologies utilized to track training efforts on a state-wide basis.

Poster 3000

Symptom Questionnaire Use Following Mild Traumatic Brain Injury: A Structural Equation Modeling Analysis

Lisa A Kreber, MA Keatley, AD Bryan, TM Merriam, AL Ribe, SW Koelemay, BG Kemph, TD Hernández

University of Colorado at Boulder Department of Psychology and The Center for Neuroscience, Boulder, CO

Each year there are approximately two million brain injuries in the United States. Of these, 80% are considered "mild." However, the life-long deficits following such an injury are far from mild. Cognitive, emotional, physical, and psychosocial functioning is compromised, yet most assessment tools are designed to measure only one or two of these domains at a time. The present study was aimed at evaluating the reliability and validity of a single questionnaire (Symptom Questionnaire, 2002) that assesses functioning across multiple domains using the following constructs: memory, attention/concentration, language, balance/coordination, vision, executive function, emotion, finances, organization, and safety. To establish the convergent and discriminant validity of each latent construct (e.g., memory, attention/concentration, etc.), a confirmatory factor analysis was estimated with all ten constructs included in the model. Results from this structural equation modeling analysis indicate that the ten-construct measurement model had marginal fit, $\chi^2(1280, N=152)=2,248$, CFI=0.80, RMSEA=0.07) with all items being significant indicators of their respective constructs. In addition, modification indices suggested a high degree of cross loading. For example, safety and organization correlated highly with memory and executive functioning, respectively, in the context of this multicomponent model. This suggests that some domains may be collapsed, and fewer measured domains may adequately capture the full spectrum of distinct deficits. Taken together, these results provide evidence that a single questionnaire, measuring function within and across several domains, can be considered a reliable, valid and comprehensive assessment tool for mild traumatic brain injury.

Index of Lead Authors and Presenters

Conference Partners

American Academy of Pediatrics
American College of Emergency Physicians
American Public Health Association
American Trauma Society
Association of State and Territorial Health Officials
Brain Injury Association of America
Children's Safety Network
Family Violence Prevention Fund
Health Resources and Services Administration
Home Safety Council
Indian Health Service
National Alliance to End Sexual Assault
National Association of EMS Physicians
National Center for Chronic Disease Prevention and Health Promotion
National Center for Environmental Health/Agency for Toxic Substances and Disease Registry
National Center for Health Statistics
National Center on Birth Defects and Developmental Disabilities
National Council on the Aging
National Highway Traffic Safety Administration
National Institute for Occupational Safety and Health
National Institute of Child Health and Human Development
National Institute of Justice
National Institute on Alcohol Abuse and Alcoholism
National Network to End Domestic Violence
National SAFE KIDS Campaign
National Safety Council
Prevent Child Abuse America
SafeUSA
Substance Abuse and Mental Health Services Administration
Suicide Prevention Action Network
U.S. Consumer Product Safety Commission

injury and violence in america

Meeting Challenges, Sharing Solutions

May 9-11, 2005
Denver, Colorado

Department of Health and Human Services
Centers for Disease Control and Prevention
MS K-65
Atlanta, GA 30341-3724

injury and violence in america

Meeting Challenges, Sharing Solutions

May 9-11, 2005
Denver, Colorado

Meeting Challenges, Sharing Solutions

May 9-11, 2005
Denver, Colorado

Spine Design
Size may change due to thickness of abstract book
Do not put this page in the book, Spine art only